

[Department  
for Environment  
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Policy paper

# The waste prevention programme for England: Maximising Resources, Minimising Waste

Updated 10 August 2023

## Applies to England

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Glossary



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# 1. Introduction

As set out in our [Environmental Improvement Plan](https://www.gov.uk/government/publications/environmental-improvement-plan) (<https://www.gov.uk/government/publications/environmental-improvement-plan>) resources on our islands – indeed on our planet – are finite and precious. Their extraction and manufacture can cause environmental harm. We want to make it easier for people to do the right thing especially against a background of a cost of living crisis, it's critical to maximise the use of these resources and minimise their waste.

Success relies on us, as a society, to change our relationship with how we use resources.

In 2018, we published our [Resources and Waste Strategy](https://www.gov.uk/government/publications/resources-and-waste-strategy-for-england) (<https://www.gov.uk/government/publications/resources-and-waste-strategy-for-england>) which set out long-term commitments and ambitions to eliminate avoidable waste by 2050. This waste prevention programme sets out how we will achieve strategic principle 2 of the Resources and Waste Strategy – to prevent waste from occurring in the first place and manage it better when it does.

We were making great strides forward in people's attitudes towards reuse, with recycling rates increasing over the longer term, but when COVID-19 arrived we were knocked back. We reverted to single use plastics as a default, to protect our own health. People needed new single-use products like facemasks and test kits, and understandably prioritised public health by buying products with additional packaging. Between 2019 and 2020 there was a large increase in residual waste, as the household recycling rate fell by 1.5 percentage points and total waste from households increased by 0.5 million tonnes.

Everything we use and consume requires resources that come from somewhere. We need to reclaim the ground lost and remind people of the positive action they have understandably got out of the habit of doing over the last few years. Our programme aims to make it the norm to reduce and reuse, so we can reduce residual waste and make our economy truly circular and sustainable.

One of our greatest challenges in the fight to preserve our natural environment is how we best shepherd our precious limited natural resources and avoid the creation of unnecessary waste and pollution that will outlive us by many thousands of years. However, it is also one of our biggest opportunities. By preventing waste, we can be more efficient with our resources, saving businesses and consumers money and reduce pressure on the environment.

We consulted on a [new Waste Prevention Programme for England](https://consult.defra.gov.uk/waste-and-recycling/waste-prevention-programme-for-england-2021/) (<https://consult.defra.gov.uk/waste-and-recycling/waste-prevention-programme-for-england-2021/>) 'Towards a Resource Efficient Economy' between March and June 2021. This document, Maximising Resources, Minimising Waste constitutes the new Waste Prevention Programme for England. It sets out our

priorities for action to manage our resources and waste in accordance with the top layers of the waste hierarchy - prevention and reuse.

We will take a policy approach encompassing 3 cross-cutting themes:

1. Designing out waste: Including ecodesign and consumer information requirements, and Extended Producer Responsibility schemes.
2. Systems and services: Including collection and take-back services, encouraging reuse, repair, leasing businesses and facilities.
3. Data and information: including materials databases, product passports (sets of data, unique to the specific product that can be accessed online and give detailed information on, for example, contained materials, components and history, to support improved outcomes such as higher quality recycling) and voluntary corporate reporting.

We have selected 7 key sectors for action, based on available data on the amount of waste arisings or known carbon emissions from production:

- construction
- textiles
- furniture
- electronics
- vehicles
- plastic and packaging
- food

Table 1 in Annex A shows the significance of each sector in terms of waste arisings, and sources of published data are cited where available throughout this document.

Any new policy proposed in this programme will be subject to public consultation considering individual and cumulative impacts on public expenditure, the cost to business including small and medium-sized enterprises, and consumer choice and affordability.

Government expenditure plans are set out in single or multi-year spending reviews. Given the long-term nature of these plans, beyond this current spending review period, funding for commitments will be dependent on decisions at the next spending review and beyond.

## **Why do we need to take action on waste prevention?**

Greater demand for products and materials globally puts increasing pressure on our natural resources and contributes to accelerating the challenges of

climate change, biodiversity loss and pollution. Managing large quantities of waste is a challenge, considering volumes, cost and impacts.

Figures presented in the [Climate Change Committee's 2022 Progress Report to Parliament](https://www.theccc.org.uk/publication/2022-progress-report-to-parliament/#downloads) (<https://www.theccc.org.uk/publication/2022-progress-report-to-parliament/#downloads>) show waste emissions in 2020 were approximately 25 million tonnes carbon dioxide equivalent (MtCO<sub>2</sub>e), almost 6% of UK emissions. Much of this comes from landfill, particularly biodegradable waste which degrades anaerobically to create methane, a greenhouse gas 25 times more potent than CO<sub>2</sub>. Through the [Net Zero Strategy](https://www.gov.uk/government/publications/net-zero-strategy) (<https://www.gov.uk/government/publications/net-zero-strategy>), we are committed to explore options to work towards the near elimination of biodegradable municipal waste to landfill from 2028.

Sustainable consumption and production, embodied by [United Nations Sustainable Development Goal \(SDG\) 12](https://sustainabledevelopment.un.org/SDG12) (<https://sustainabledevelopment.un.org/SDG12>), is vital for achieving transformative change to address this. Using resources efficiently is one of the main pillars of this Sustainable Development Goal, and action to prevent waste is critical in this respect.

At the 15th Conference of Parties to the United Nations Convention on Biological Diversity in December 2022, nations adopted 4 goals and 23 targets for 2030 in the landmark United Nations biodiversity agreement known as the [Kunming-Montreal Global Biodiversity Framework](https://www.cbd.int/article/cop15-cbd-press-release-final-19dec2022) (<https://www.cbd.int/article/cop15-cbd-press-release-final-19dec2022>). Target 16 sets out the ambition to significantly reduce our consumption and waste generation in order for all people to live well. It aims to do this by ensuring that people are encouraged and enabled to make sustainable consumption choices including by establishing supportive policy, legislative or regulatory frameworks, improving education and access to relevant and accurate information and alternatives, and by 2030, reducing the global footprint of consumption in an equitable manner and halving global food waste.

Waste prevention has huge potential, as a number of reports discuss including from [Business In The Community](https://www.bitc.org.uk/) (<https://www.bitc.org.uk/>), [Green Alliance](https://green-alliance.org.uk/) (<https://green-alliance.org.uk/>), [Waste and Resources Action Programme](https://wrap.org.uk) (<https://wrap.org.uk>) and [Aldersgate Group](https://www.aldersgategroup.org.uk/) (<https://www.aldersgategroup.org.uk/>). Products and materials need not become waste with good design, systems and services, and data. Benefits include:

- Reducing waste decreases emissions across the whole product lifecycle, increases resource security, safeguards our natural environment, creates jobs in value retention activities such as remanufacturing and helps us achieve net zero.
- Products that last longer and can be affordably repaired rather than replaced, perhaps with multiple use cycles and owners, present an important opportunity for consumers to save money.

- Where more products are reused, repaired, and remanufactured, a larger sharing economy is achieved, and where material inputs are required, secondary materials are more frequently used.
- By substantially reducing the rate at which products and materials become waste, benefits include lower greenhouse gas emissions, increased resource security, safeguarding of the natural environment, plus jobs and affordable products. Consumers can save money by repairing rather than replacing items that are worn or no longer work, and by buying quality pre-owned products which are designed to last.
- When resources are valued, people are less likely to litter them. For instance, a deposit return scheme for drinks containers would boost recycling levels, reduce littering, and offer greater opportunities to collect higher quality, uncontaminated materials in greater quantities thus promoting a circular economy.

We want to encourage business models which maximise the value of end products, for example through sharing of products supported through digital systems. Or greater servitisation where the company retains ownership and responsibility for maintenance but sells the product as a service, for example online music platforms. This maximises the useful life of the product. This will be supported by the adoption of ecodesign principles in marketed products, aiding consumers to make even more informed decisions using reliable information about the sustainability of their product choices, and collection of more products once consumers no longer have use for them. Reuse and repair facilities and services will increasingly be available for consumers, and information about the availability of secondary materials will be more readily available to manufacturers which want to use them.

## **How does this programme relate to “Our Waste, our Resources: A Strategy for England” and to our wider environmental and economic goals?**

The new programme builds on and embeds strategic principle 2 from our Resources and Waste Strategy - to prevent waste from occurring in the first place and manage it better when it does. Our goal is for a circular economy approach which retains products and materials in circulation for as long as possible and at their highest value.

To drive down the amount of waste we produce, and encourage reuse and recycling, the government has set an [Environment Act 2021 environmental target \(https://www.gov.uk/government/consultations/environment-act-2021-environmental-targets\)](https://www.gov.uk/government/consultations/environment-act-2021-environmental-targets) to halve residual waste (excluding major mineral wastes) kg per person by the year 2042. This will be measured as a reduction from

2019 levels, which is estimated to be approximately 574 kg per capita. The target will:

- help to deliver our overarching aim for zero avoidable waste by 2050
- support the commitment in the government's Net Zero Strategy to the near elimination of biodegradable municipal waste to landfill from 2028 and reduced emissions from landfill and incineration, saving an estimated 35 MtCO<sub>2</sub>e by 2050
- build on the Resources and Waste Strategy commitments to help achieve a 65% municipal recycling rate and send less than 10% of municipal waste to landfill by 2035
- support the government commitment to eliminate avoidable plastic waste by 2042

The target sets a clear direction for reducing the amount of waste per person and can be delivered both by waste minimisation and recycling.

Waste prevention will help with our commitments to double the resource productivity of our economy by 2050, protect our natural capital, and contribute to goals in areas such as:

- natural capital - water, air and biodiversity: globally, we extract three times the resources we did in 1970, and this is estimated to more than double by 2060.
- greenhouse gas emissions - as stated in the Net Zero Strategy, greater resource efficiency will help cut emissions from manufacturing including processing of construction materials (16% of UK's emissions in total), whilst also reducing waste emissions (6% of UK's emissions). It will also help reduce consumption-related emissions from the production of goods and services consumed here but partly generated overseas. As stated in the [UK and England's carbon footprint to 2019](#) (<https://www.gov.uk/government/statistics/uks-carbon-footprint>), embedded emissions from imports to the UK stand at approximately 300 MtCO<sub>2</sub>e (2018) and UK production emissions attributable to UK final consumption at 255 MtCO<sub>2</sub>e. Reuse compared to recycling reduces emissions from processing and manufacture as well as extraction of raw materials.
- economic resilience - resource security: better management of our [Material footprint in the UK](#) (<https://www.ons.gov.uk/economy/environmentalaccounts/articles/materialfootprintinthek/2018>) is estimated at 971 Mt consumption-based emissions (in 2018), including 400 Mt of imports, increases our economic resilience and supports a transition to a low carbon economy.
- jobs and growth - a significant proportion of products consumed in England are imported, so shifting towards a more circular economy has the potential to increase jobs locally. [Chartered Institution of Wastes Management's Beyond Waste: Essential Skills for Greener Tomorrow](#) (<https://www.circularonline.co.uk/wp-content/uploads/2023/03/Beyond-Waste->



[Essential-Skills-for-a-Greener-Tomorrow.pdf](#)) estimated an aggregated total of new roles on top of today's baseline to be 238,600.

Also relevant to waste prevention are the 2021 to 2025 [Greening Government Commitments](#) (<https://www.gov.uk/government/collections/greening-government-commitments>). These set out the actions being taken by Government to improve the environmental performance of its own estate and operations. It sets an overall target to reduce the amount of waste generated by 15% from the 2017 to 2018 baseline and includes further sub-targets to aid this such as removing consumer single use plastic from the central government estate, measuring and reporting on food waste.

## Consultation outcome

The [consultation on the Waste Prevention Programme 'Towards a Resource Efficient Economy'](#) (<https://www.gov.uk/government/consultations/waste-prevention-programme-for-england-2021>) conducted in 2021 showed there was broad support for greater focus on waste prevention and for embedding circular economy approaches in policy, making use of levers such as ecodesign and Extended Producer Responsibility (EPR). We recognise the importance of a shift to a circular economy and agree that Extended Producer Responsibility is a powerful tool to deliver this as part of our Resources and Waste Strategy. As with any tool, we need to make sure it is the right tool to solve the problem, therefore Extended Producer Responsibility will be considered alongside a framework of policy options. Respondents also wanted to see more definitive actions and timelines. We have added these where possible but in many cases policies are still in development with timelines to be agreed.

## Working together across the UK and the government

Though this is an England-only programme, as waste policy is devolved, we have shared goals across the United Kingdom and agreed ways of working together, set out in the provisionally agreed Resources and Waste Common Framework. We welcome the contributions other nations have made in moving towards greater circularity, notably the Welsh [Beyond Recycling Strategy](#) (<https://gov.wales/beyond-recycling>), the [Scottish Making Things Last: a circular economy strategy for Scotland](#) (<https://www.gov.scot/publications/making-things-last-circular-economy-strategy-scotland/>) and the [Waste Prevention Programme for Northern Ireland- Stopping Waste in its Tracks](#) (<https://www.daera-ni.gov.uk/publications/waste-prevention-programme-northern-ireland-stopping-waste-its-tracks>). We also recognise the benefit for consumers and producers of common provisions in some areas across markets and are committed to working closely

in particular on regulatory measures including where we consider Extended Producer Responsibility schemes.

The UK Government welcomes the Scottish Government's decision to align commencement of deposit return scheme (DRS) in Scotland with rest of the UK DRS schemes. Aligning commencement will reduce complexity for businesses and consumers. It is essential that all UK DRS schemes are interoperable and that businesses and consumers can easily understand what is required to comply with DRS requirements. Defra is working with devolved administrations at pace to collectively agree the best approach.

Across government we are committed to delivering on Net Zero and the [Environmental Improvement Plan](#)

(<https://www.gov.uk/government/publications/environmental-improvement-plan>), encouraging growth, creating jobs and supporting UK supply chains, and this will involve assessing a range of policy measures.

We are funding a joint research project with the Department for Energy Security and Net Zero to improve our understanding of how resource efficiency can enable industry to transition to Net Zero. This study will draw together evidence on the barriers and enablers to implementing resource efficiency measures and the degree of potential efficiency these measures could achieve, supporting both waste prevention and wider environmental aims.

The upcoming Waste Sector Decarbonisation Plan will build on the Resources and Waste Strategy for England, and bring together in one place the policies, plans and research from across Government which will help us in our journey to decarbonise the waste sector in England through to Carbon Budget 6 (2033 to 2037). This includes policies that directly contribute to UK net zero as part of the Carbon Budget Delivery Plan, plus policies which support decarbonisation more broadly, including through reducing emissions abroad as well as from other sectors in the national inventory, for example through improved resource efficiency.

Additionally, UK Research and Innovation have a number of projects encouraging resource efficiency and waste prevention including:

- We have funded 5 circular economy research centres and a central hub to coordinate activity at a cost of £30 million. These 5 centres, set up in 2021, cover textiles, chemicals, metals, critical minerals and mineral-based construction materials, and are also supported by industry.
- [Resource Efficiency for Materials and Manufacturing \(REforMM\)](#) (<https://iuk.ktn-uk.org/programme/manufacturing-materials-reform/>) a £15 million programme which aims for the UK to be a leader in resource efficiency with organisations understanding the environmental, social and economic impact of the full lifecycle and thriving from adoption of resource efficient solutions which are fundamental to UK and global Net Zero ambitions.

- [Materials and Manufacturing Vision 2050](https://www.ukri.org/publications/innovate-uk-materials-and-manufacturing-vision-2050/) (<https://www.ukri.org/publications/innovate-uk-materials-and-manufacturing-vision-2050/>) Innovate UK's 2050 vision document is a re-imagining of materials and manufacturing together. It's a document that delves into the challenges and opportunities that lie in front of the UK materials and manufacturing sectors in the coming decades. The document makes the case that to be internationally competitive it is imperative for businesses to:
  - have net zero and resource efficient solutions: to understand and minimise the environmental impact across the full operation and whole product lifecycle
  - be resilient and responsive: to mitigate risks from critical supply, national or global disruption and climate change therefore becoming increasingly resilient
  - be technologically advanced and digital: to adopt digital and advanced technology to improve efficiency and visibility across supply chains

## 2. Designing out waste

**Our aim:** to drive change in product design so that products are made to be durable, repairable and recyclable, and can be remanufactured where appropriate, through policies such as ecodesign, consumer information, and Extended Producer Responsibility schemes.

Our linear model of 'take, make, use and dispose' comes with high social, environmental and financial costs. Products on the market that break or wear out prematurely are often not easily repairable or recyclable, or contain chemicals that are harmful to human health or the environment, hindering reuse and recycling. Evidence collected by the Waste and Resources Action Programme (WRAP) on [Embedding environmental sustainability in product design](https://wrap.org.uk/resources/guide/embedding-environmental-sustainability-product-design) (<https://wrap.org.uk/resources/guide/embedding-environmental-sustainability-product-design>) suggests that 80% of the damage inflicted upon the environment when products become waste can be avoided by decisions made at the design stage. Premature obsolescence is expensive and frustrating for consumers. Improved design can also increase our economic resilience in particular where this involves reuse or recycling of critical minerals such as the cobalt and lithium in batteries.

Setting 'ecodesign' requirements means products must meet a mandatory minimum level of environmental performance, or be designed in a certain way, in order to be placed on the market. For example, regulations may require a certain level of energy efficiency, proportion of recycled content, minimum number of use cycles before performance deteriorates or that certain components can be easily removed and replaced by consumers when they fail.

Informed consumer choice helps drive the market. Providing information that consumers can trust, supported by other policies, can support a shift toward greater resource efficiency. A 2019 Waste and Resources Action Programme report titled: '[The Effectiveness of Providing Pre-Purchase Factual Information in encouraging more Environmentally Sustainable Product Purchase Decisions](https://wrap.org.uk/resources/report/effectiveness-providing-pre-purchase-factual-information-encouraging-more) (<https://wrap.org.uk/resources/report/effectiveness-providing-pre-purchase-factual-information-encouraging-more>)' showed that products labelled with their environmental credentials may be preferred over unlabelled products. The UK is well placed to make this shift due to its manufacturing and design expertise.

Studies such as Eunomia's 2016 report '[A Resourceful Future – Expanding the UK Economy](https://www.eunomia.co.uk/reports-tools/a-resourceful-future-expanding-the-uk-economy/) (<https://www.eunomia.co.uk/reports-tools/a-resourceful-future-expanding-the-uk-economy/>)' also show economic opportunities for industries focused on repair and remanufacturing.

## What has the government done to date?

The government published a new [energy-related product policy framework in 2021](https://www.gov.uk/government/publications/energy-related-products-policy-framework) (<https://www.gov.uk/government/publications/energy-related-products-policy-framework>), which set out plans to reduce the energy and resource consumption of energy-related products, primarily by introducing new ecodesign requirements for certain products. To support the development of the framework, research was undertaken, to identify the appliances with the greatest opportunity for improvements, and to assess policy options. In addition, we have completed new research titled '[Implementing eco-modulation into the UK's Waste Electrical and Electronic Equipment system and exploring resource efficiency and eco-design for energy-related products](https://sciencesearch.defra.gov.uk/ProjectDetails?ProjectId=21169) (<https://sciencesearch.defra.gov.uk/ProjectDetails?ProjectId=21169>)' to explore resource efficiency options aimed at further reducing the environmental impact of electricals across their full lifecycle with particular focus on production and disposal.

As announced in the [Plan for Water](https://www.gov.uk/government/publications/plan-for-water-our-integrated-plan-for-delivering-clean-and-plentiful-water) (<https://www.gov.uk/government/publications/plan-for-water-our-integrated-plan-for-delivering-clean-and-plentiful-water>) in April 2023, we will publish our response to our mandatory water efficiency labelling scheme consultation. We will engage with our stakeholder steering group on the next stages of design and standards to implement the scheme in 2025.

In 2020 to 2021, the government introduced updated Ecodesign requirements for a small group of electrical appliances. These measures included, for the first time, requirements relating to spare part availability and information for repairers, as well as requirements relating to disassembly for lighting products. Also in 2021, we consulted on recyclability labelling (on packaging) as part of our proposals to introduce Extended Producer Responsibility for packaging.

The Competition and Markets Authority published their [Green Claims Code: making environmental claims \(https://www.gov.uk/government/publications/green-claims-code-making-environmental-claims\)](https://www.gov.uk/government/publications/green-claims-code-making-environmental-claims) in 2021 with 6 key principles, reinforcing consumer protection law, that firms making green claims must follow. They “must not omit or hide important information” and “must consider the full life cycle of the product”. If a business doesn’t comply with the law, the Competition and Markets Authority or other bodies – such as Trading Standards Services, The Advertising Standards Authority or sector regulators – may take action.

We have conducted research into possible approaches for consumer information such as binary indications, for example whether a product is recyclable or not, and multifactorial rating schemes based on key aspects such as durability, reparability, recyclability and recycled content.

In February 2023, UK Research and Innovation launched the Circular Critical Materials Supply Chains (CLIMATES) fund, with an initial £15 million to focus on making the UK’s rare earth element supply chains more resilient and boosting the circular economy. This will support innovations in the recycling of rare earth elements, as well as research and development, engagement with international partners and activities to identify and support future skills needs.

## **What the government will do**

In line with a ‘designing out waste’ approach the specific actions we will take are as follows:

1. We will continue to work with industry, academia and other key stakeholders to support the shift towards product, material and business model design for greater circularity and resource efficiency, minimising waste and reducing environmental and climate impacts. We will encourage industry to set their own standards, reducing the need for regulation.
2. For electrical equipment and appliances, in line with the Department for Energy Security and Net Zero ‘energy-related products policy framework’, we will consider broadening the Ecodesign requirements described in chapter 2 to a wider range of electrical products, if our analysis supports that approach. We will also explore additional ways in which ecodesign could be used to support the material resource efficiency of electricals, for example requirements for modular design to facilitate repairs, upgrades, disassembly and recovery of components and materials.
3. In the Environment Act 2021, we obtained powers to be able to implement mandatory eco-design, Extended Producer Responsibility schemes and require environmental information be provided for consumers, or product passports for use throughout value chains. For non-energy-related products such as textiles and furniture we will explore how we can use these powers. We will continue to

work with stakeholders to gather data and build our evidence base in order to understand which actions would result in the biggest impacts, whilst minimising burdens on business.

4. In line with our Resources and Waste Strategy commitment we are exploring the role that guarantees and warranties can play in ensuring products stay in use longer and maintain their value. We will look to see if research is needed.

### 3. Systems and services

**Our aim:** to ensure there is a well-functioning system of public, private, and voluntary sector and social enterprise organisations, and services operating at the local level that facilitate reuse, repair and remanufacture of products, addressing market weaknesses such as limited collections and reverse logistics.

Reuse and repair are not new practices; they were commonplace in the past. In the present day consumers can save money by repairing items or buying quality pre-owned goods. Whilst in some cases fast changing technology can render older products obsolete, most older products continue to be useful if resold, repaired, or remanufactured. But the relative costs of doing so and sending individual products back to the manufacturer, known as “reverse logistics”, can be difficult and costly, particularly for smaller businesses.

Change is underway with new business models in terms of hiring, sharing and leasing. In this burgeoning “sharing economy”, consumer goods, food, and transport (such as bikes), are distributed on demand using digital platforms, which extends the useful life of products. As Defra’s [Pilot for a Nursery Equipment Product Service System](https://randd.defra.gov.uk/ProjectDetails?ProjectID=18198&FromSearch=Y&Publisher=1&SearchText=product%20service%20system&SortString=ProjectCode&SortOrder=Asc&Paging=10%23Description) (an Action-Based Research project on a product service system for baby buggies and car seats) identified, liability and reverse logistics are the main challenges to be addressed.

Some local authorities currently facilitate reuse through Household Waste Recycling Centres (HWRCs) and bulky waste collections. The voluntary sector and social enterprise, reverse logistics, re-commerce businesses and emerging digital platforms provide further opportunities for sharing and resale. Charity shops and social enterprises, like the Reuse Network, provide jobs and affordable quality goods, whilst also reducing waste.

Despite these services, as per [WasteDataFlow - Local Authority waste management data](https://www.data.gov.uk/dataset/0e0c12d8-24f6-461f-b4bc-f6d6a5bf2de5/wastedataflow-local-authority-waste-management) (2019 to 2020), a

considerable share of products suitable for reuse - either collected as part of local authority-run bulky waste collections, taken to Household Waste Recycling Centres or simply thrown in the bin – are treated as waste and disposed of or at best, recycled. Pre-covid, of the 62 local authorities who reported on bulky items collected for recycling or reuse at Household Waste Recycling Centres, reuse accounted for only 8% of the total. Only 15 of these authorities reported more than 100 tonnes of bulky items being collected for reuse with the proportion varying between 4% and 44%. A 2012 Waste and Resources Action Programme [study into the re-use potential of household bulky items](https://wrap.org.uk/resources/report/study-re-use-potential-household-bulky-items) (<https://wrap.org.uk/resources/report/study-re-use-potential-household-bulky-items>) of 14 Household Waste Recycling Centres indicated that some 32% of bulky items deposited might be suitable for reuse. Research suggests that waste prevention and reuse at the local level is held back by lack of storage space, which is expensive in urban areas.

## What has the government done to date?

With items being defined as waste once deemed to be “discarded” by an owner, it is claimed that it can be uneconomical to reuse them because of the extra regulatory burdens. As a result, the [Definition of Waste Guidance](https://www.gov.uk/government/publications/legal-definition-of-waste-guidance/decide-if-a-material-is-waste-or-not) (<https://www.gov.uk/government/publications/legal-definition-of-waste-guidance/decide-if-a-material-is-waste-or-not>) was updated, making it clearer for businesses in assessing whether a material is waste or not. We also supported the Waste and Resources Action Programme to produce a [Household Waste Recycling Centre \(HWRC\) Guide](https://wrap.org.uk/resources/guide/household-waste-recycling-centre-hwrc-guide) (<https://wrap.org.uk/resources/guide/household-waste-recycling-centre-hwrc-guide>) which included reuse systems.

Defra has completed an initial case study into possible [Resource Efficiency Clusters](https://wrap.org.uk/resources/case-study/case-study-resource-efficiency-clusters) (<https://wrap.org.uk/resources/case-study/case-study-resource-efficiency-clusters>). It found they were helping to address market failures in terms of lack of information about opportunities; a lack of capability and capacity amongst businesses; and disincentives in materials pricing. This is occurring through peer-to-peer activity and the input of specialist practitioners. The research did not draw definitive conclusions about the most effective type of clusters but considered IT solutions were likely to be important in supporting this activity.

The Department for Business and Trade supports the [Retail Sector Council](https://retailsectorcouncil.co.uk/) (<https://retailsectorcouncil.co.uk/>)’s [Green Street](https://greenstreet.org.uk/) (<https://greenstreet.org.uk/>) project giving high street businesses the knowledge, tools and skills to help them become more sustainable.

## What the government will do

In line with encouraging and supporting action by business, the voluntary sector and social enterprise, and local authorities, we will:

1. Ensure the waste hierarchy is more stringently applied when companies and other bodies deal with their waste. The waste hierarchy ranks waste management options according to what is best for the environment. It gives top priority to preventing waste in the first place. When waste is created, it gives priority to preparing it for re-use, then recycling, then recovery (including anaerobic digestion or incineration with energy recovery), and last of all disposal (for example, landfill or incineration without energy recovery). We will revise our waste hierarchy guidance by 2024, setting clear expectations for how decisions on waste treatment routes should be made. We will also consider whether changes to waste legislation could be usefully made to support a more circular economy.
2. Develop best practice guidance on reuse for local authorities, including consideration of how reuse is reported, to help ensure that more Household Waste Recycling Centres and bulky waste collections are performing an effective role in waste prevention as well as enhancing local communities', business' and the voluntary sector's roles in achieving more reuse, including case studies of successful reuse hubs.
3. As a means of reducing the burden on local authorities and ensuring that it is as easy as possible for households to return unwanted old items for reuse or recycling, we will consult on proposals to remove fees for consumers to have bulky domestic furniture collected from their homes by 2025.

## 4. Data and Information

**Our aim:** make use of data and digitalisation to support greater use of secondary materials and used products, as well as to increase transparency in terms of progress by local authorities and businesses.

Large quantities of industrial waste are produced annually. Data from the government's [UK statistics on waste \(https://www.gov.uk/government/statistics/uk-waste-data/uk-statistics-on-waste\)](https://www.gov.uk/government/statistics/uk-waste-data/uk-statistics-on-waste) show that 10.5 million tonnes were produced in England in 2019. In some cases, this waste can be used as an input in other processes, replacing virgin materials. For instance as noted by [global cement's article \(https://www.globalcement.com/magazine/articles/419-steel-slag-a-supplementary-cementitious-material-and-basis-for-energy-saving-cement\)](https://www.globalcement.com/magazine/articles/419-steel-slag-a-supplementary-cementitious-material-and-basis-for-energy-saving-cement), slag from steel-producing blast furnaces can be a substitute material to make cement. By making use of secondary materials and industrial by-products in manufacturing, we can significantly reduce waste, become more self-reliant in terms of materials, and reduce greenhouse gas emissions.



As Defra's [Review of the Future Resource Risks Faced by UK Business](https://sciencesearch.defra.gov.uk/ProjectDetails?ProjectId=20214) (<https://sciencesearch.defra.gov.uk/ProjectDetails?ProjectId=20214>) notes, maximising the value obtained from critical minerals is important in transitioning to Net Zero, as products such as electric vehicles are dependent on materials such as lithium. [Research by the University of Leeds on making the most of industrial wastes](https://www.researchgate.net/publication/325416048_Making_the_most_of_industrial_wastes_strengthening_resource_security_of_valuable_metals_for_clean_growth_in_the_UK#:~:text=Policy%20and%20regulations%20should%20encourage%20industrial%20synergies%20and,lithium%20and%20rare-earth%20elements%20necessary%20for%20clean%20technologies.) ([https://www.researchgate.net/publication/325416048\\_Making\\_the\\_most\\_of\\_industrial\\_wastes\\_strengthening\\_resource\\_security\\_of\\_valuable\\_metals\\_for\\_clean\\_growth\\_in\\_the\\_UK#:~:text=Policy%20and%20regulations%20should%20encourage%20industrial%20synergies%20and,lithium%20and%20rare-earth%20elements%20necessary%20for%20clean%20technologies.](https://www.researchgate.net/publication/325416048_Making_the_most_of_industrial_wastes_strengthening_resource_security_of_valuable_metals_for_clean_growth_in_the_UK#:~:text=Policy%20and%20regulations%20should%20encourage%20industrial%20synergies%20and,lithium%20and%20rare-earth%20elements%20necessary%20for%20clean%20technologies.)) found materials critical for low-carbon industries, for example to manufacture turbines and electric vehicle batteries, can also be derived from industrial waste such as steel slag and fly ash. Better data and information can facilitate their extraction from products containing these materials at end of life to maximise the value obtained.

Industrial symbiosis involves using the secondary materials from a given industrial process as inputs in a different industrial process. This can generate new value from previously under-used waste streams and by-products, and promote growth at regional and national levels as well as wider environmental benefits. An evaluation of the previous National Industrial Symbiosis Programme ([NISP](https://www.international-synergies.com/ourprojects/nisp/) (<https://www.international-synergies.com/ourprojects/nisp/>)) suggests that industrial symbiosis can bring significant benefits to UK industry from the money saved by diversion from landfill alone. This independently verified report on the lifetime economic impacts of the National Industrial Symbiosis Programme (2005 to 2013) identified savings of £1 billion for business, carbon emissions reductions of 42 million tonnes, and sizeable reductions in virgin material use and water usage.

Product passports, which provide accessible information on the material constituents of products can facilitate more effective recovery and reuse of their materials. This could include information on critical minerals, such as rare earth elements, cobalt or lithium, that are mostly imported and important for low-emission technologies such as electric vehicles, wind turbines, batteries and solar farms as noted in a [Resource Recovery from Wastes report](https://resourcerecoveryfromwaste.files.wordpress.com/2018/05/rrfw_ppn_making-the-most-of-industrial-wastes_web.pdf#:~:text=Making%20the%20most%20of%20industrial%20wastes%3A%20strengthening%20resource,promote%20circular%20economy%20approaches%20in%20industrial%20waste%20management.). ([https://resourcerecoveryfromwaste.files.wordpress.com/2018/05/rrfw\\_ppn\\_making-the-most-of-industrial-wastes\\_web.pdf#:~:text=Making%20the%20most%20of%20industrial%20wastes%3A%20strengthening%20resource,promote%20circular%20economy%20approaches%20in%20industrial%20waste%20management.](https://resourcerecoveryfromwaste.files.wordpress.com/2018/05/rrfw_ppn_making-the-most-of-industrial-wastes_web.pdf#:~:text=Making%20the%20most%20of%20industrial%20wastes%3A%20strengthening%20resource,promote%20circular%20economy%20approaches%20in%20industrial%20waste%20management.))

Ease of access to data is a fundamental enabler. It can support sourcing of industrial secondary materials as inputs as well as investment decisions that require knowledge of material availability. Studies, like the European Commission's [study and portfolio review of the projects on industrial symbiosis in DG Research and Innovation](https://op.europa.eu/en/publication-detail/-/publication/f26dfd11-6288-11ea-b735-01aa75ed71a1) (<https://op.europa.eu/en/publication-detail/-/publication/f26dfd11-6288-11ea-b735-01aa75ed71a1>) also identify facilitation as a crucial element that is needed to advance the implementation of industrial

symbiosis. Facilitation accelerates symbiosis through the identification of potential opportunities to use secondary materials as inputs between potential partners or businesses. Further research is needed to establish the economic and material potential for increased symbiotic activity in the UK and the role of a facilitated network within this scope.

Reducing the use of hazardous substances in materials and products (articles and objects) can help remove some barriers to reuse and recycling, as well as encourage the use of secondary materials. It can also mitigate the impact of 'legacy substances', where chemicals in products placed on the market are later restricted, for example by being listed as Persistent Organic Pollutants which impact on the water supply. The substitution and management of hazardous substances can be improved through better identification and tracking of chemicals in products through supply chains and to the waste stage.

Another important area in which data usage is important is in both local authority and corporate reporting on resource efficiency approaches. This helps track progress and enable benchmarking across industry and authorities. Corporate reporting also supports channelling of investment funds into sustainable businesses. Considerable headway has been made on common standards of carbon reporting, but not yet on resource efficiency, for example, use of secondary materials or levels of reuse of products and materials.

## **What has the government done to date?**

We have carried out an initial exploration of opportunities from industrial symbiosis. Models for effective symbiosis programmes vary, and successes are quite often achieved at a local level. For example, in Northern Ireland the Invest NI Resource Matching service continues to build on the foundation of the earlier National Industrial Symbiosis Programme network and in England the West Midlands is currently investigating an Industrial Symbiosis programme.

We have undertaken [research \(https://sciencesearch.defra.gov.uk/ProjectDetails?ProjectId=20943\)](https://sciencesearch.defra.gov.uk/ProjectDetails?ProjectId=20943) to help us understand how best to track chemicals in products (articles and objects) across supply chains, to reduce barriers to reuse and recycling whilst reducing the risk from harmful chemicals.

Through the UK Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) work programme and contributing to our [Plan for Water \(https://www.gov.uk/government/publications/plan-for-water-our-integrated-plan-for-delivering-clean-and-plentiful-water/plan-for-water-our-integrated-plan-for-delivering-clean-and-plentiful-water#ministerial-foreword\)](https://www.gov.uk/government/publications/plan-for-water-our-integrated-plan-for-delivering-clean-and-plentiful-water/plan-for-water-our-integrated-plan-for-delivering-clean-and-plentiful-water#ministerial-foreword) we are proposing developing new restrictions on the use of perfluoroalkyl and polyfluoroalkyl substances (PFAS). They are highly persistent chemicals, sometimes referred to as 'forever chemicals', which are used in lots of everyday products. They remain in the environment for years after use and move between different parts of the

environment, including soil and water bodies, the presence of these chemicals may limit opportunities at the end of life.

## What the government will do

The government committed in the Resources and Waste Strategy to address information barriers to the use of secondary materials. To take this forward:

1. The Department for Energy Security and Net Zero will continue to explore the potential role of industrial symbiosis in reducing emissions from industry and how best to facilitate this. It will build on early-stage research conducted in 2021 to explore how a facilitated industrial symbiosis network could operate and the benefits of doing so. This will be informed by a data strategy to maximise synergies without compromising data security, recognise regional differences, and complement existing initiatives.

2. Defra will continue to take action to establish a digital waste tracking system which will help us better understand stocks and flows of waste returned to the economy as secondary materials. Defra [consulted on proposals for the introduction of mandatory digital waste tracking](https://consult.defra.gov.uk/environmental-quality/waste-tracking/) (<https://consult.defra.gov.uk/environmental-quality/waste-tracking/>) in 2022. We will issue our Government response to that consultation in 2023, and expect to start private beta testing the digital platform later in 2023. The dates for implementation will be subject to the time needed for IT development, and the transition time needed by businesses.

3. Defra and the Department for Energy Security and Net Zero will work with other Departments and industry to continue to explore options to support greater accessibility and quality of materials data. The shared objective is to provide greater visibility of material flows to support the resilience and circularity of industrial supply chains. High quality materials data along material supply chains is critical to informing the development of a wide range of government policy areas and to the effective monitoring and evaluation of these policies.

4. Defra will explore using the resource efficiency information power in the Environment Act 2021 or other relevant powers for the introduction of product passport requirements, to support reuse and extraction of secondary materials. This could be as part of a broader product policy framework including for example Extended Producer Responsibility, ecodesign or consumer information requirements.

5. As noted in chapter 1 the Department for Energy Security and Net Zero and Defra are collaborating on a major research project that aims to better understand the carbon abatement potential of resource efficiency measures in different sectors, including approaches which advance the circular economy. The work will inform future policy development and will help us better

understand the true potential of resource efficiency measures in reducing demand for natural resources and the amount of waste being produced.

6. Led by the Office for National Statistics (ONS)-Integrated Data Service (IDS), HM Revenue & Customs (HMRC) and the UK Circular Economy Hub (CE-Hub), phase 1 of a pilot project to improve data traceability and transparency in the circular economy has concluded. Analysis and conclusions from phase 1 will form the basis of a UK Circular Economy framework, with the objective of creating a pioneering data pooling network that securely brings together public and private data from across industry, government and academia.

## 5. Construction

**Our aim:** to reduce construction waste and increase the reuse of construction materials at their highest value. This means designing buildings for adaptability and deconstruction, increased reuse of components and use of materials that can be reused and recycled and improved demolition systems.

A [report by Arup and the Ellen MacArthur foundation](https://www.arup.com/perspectives/publications/research/section/first-steps-towards-a-circular-built-environment) (<https://www.arup.com/perspectives/publications/research/section/first-steps-towards-a-circular-built-environment>) found the UK construction sector uses the most resources and generates the most waste of any sector, producing over 60 million tonnes of non-hazardous waste each year in England, with up to 15% of materials being wasted during the construction process. [Defra's UK Statistics on Waste](https://www.gov.uk/government/statistics/uk-waste-data/uk-statistics-on-waste) (<https://www.gov.uk/government/statistics/uk-waste-data/uk-statistics-on-waste>) show although around 90% of construction waste is recycled much of this is downcycled - used to backfill holes on sites or crushed into aggregate - which is inefficient in terms of the energy used to create these materials, and carbon emissions.

On a global level, data from the United Nation Environment Programme's [Global Status Report](https://www.unep.org/resources/publication/2019-global-status-report-buildings-and-construction-sector) (<https://www.unep.org/resources/publication/2019-global-status-report-buildings-and-construction-sector>) shows the manufacture of construction materials is responsible for 11% of CO2 emissions. Much of the focus on emissions in the built environment has been on operational energy use. But [data from the Centre for Industrial Energy, Materials and Products](http://ciemap.leeds.ac.uk/wp-content/uploads/2018/05/Briefing-Note-5.pdf) (<http://ciemap.leeds.ac.uk/wp-content/uploads/2018/05/Briefing-Note-5.pdf>) shows at least 25%, and in some cases as much as 60%, of a building's whole life emissions derive from its materials.

These emissions can be reduced through designing buildings so they can be repurposed and disassembled, optimising material usage, using more low-carbon materials (such as using timber where safe to do so), and increasing reuse. According to a [Leeds University study](https://green-alliance.org.uk/less_in_more_out.php) ([https://green-alliance.org.uk/less\\_in\\_more\\_out.php](https://green-alliance.org.uk/less_in_more_out.php)), in this way, we could reduce carbon

emissions by approximately 80 MtCO<sub>2</sub>e between 2023 and 2032. The emissions cited in the report are the result of a considerable amount of work that has been carried out by the University of Leeds to collate individual carbon footprints to an economy wide-model to enable estimates of national impacts from resource efficiency. It has been used to provide recommendations to the Climate Change Committee and underpins the UK government annual consumption-based emissions inventory but they remain classed as experimental statistics and do not directly correspond with territorial emissions defined under the Kyoto protocol.

Further [modelling by the Waste and Resources Action Programme and the University of Leeds \(https://wrap.org.uk/resources/report/uk-policy-pathways-increasing-resource-productivity-2050#download-file\)](https://wrap.org.uk/resources/report/uk-policy-pathways-increasing-resource-productivity-2050#download-file) found a potential reduction to territorial greenhouse gas emissions relating to construction of 151 MtCO<sub>2</sub>e between 2021 and 2050, from selected resource efficiency policy options. The same options could achieve a reduction to global greenhouse gas emissions resulting from UK consumption of 470 MtCO<sub>2</sub>e as well as reducing raw material consumption by 2,900 Mt over the same period, according to the model.

Technically, it is possible to reuse many elements of buildings, from structural elements such as steel beams, bricks, and roofing, to fixtures such as windows. This is subject to meeting the requirements of building regulations to ensure they are used safely and to meet the increasing performance standards expected of buildings. Unpublished data from the University of Exeter found reusing materials is substantially better than recycling in terms of reducing emissions. One study shows that emissions can reduce by 13% to 31%, depending on material type, if 30% of material was reused.

The sector will need to meet the challenges of Net Zero and reducing waste, by designing buildings to be disassembled rather than demolished, and to be adaptable to meet changing future needs. Waste also needs to be properly managed during the construction process, such that different waste streams are properly segregated, and that recyclable or reusable materials are identified.

Change is already underway, as companies work to reduce their waste and set Net Zero targets, and a digital transformation, expected to improve data on our building stock, using technology such as Building Information Modelling. Initiatives across the sector seek to drive the transition towards circularity, for example, the Major Infrastructure – Resource Optimisation Group (MI-ROG), a grouping of major infrastructure operators, exploring opportunities to share materials between projects through a [“Resource Exchange Mechanism” \(https://aecom.com/ca/projects/circular-economy-action-major-infrastructure-resources-optimisation-group-mi-rog/\)](https://aecom.com/ca/projects/circular-economy-action-major-infrastructure-resources-optimisation-group-mi-rog/). The Steel Construction Institute published a protocol [to encourage reuse of structural steel \(https://steel-sci.com/assets/downloads/steel-reuse-protocol-v06.pdf\)](https://steel-sci.com/assets/downloads/steel-reuse-protocol-v06.pdf). BREEAM, Home Quality Mark and other sustainability assessment schemes seek to encourage better practice by awarding credits for cutting waste generation.

## What has the government done to date?

Through the Green Construction Board Taskforce, a [Routemap to Zero Avoidable Waste in Construction](https://www.constructionleadershipcouncil.co.uk/press-releases/zero-avoidable-waste-routemap-launch/) (<https://www.constructionleadershipcouncil.co.uk/press-releases/zero-avoidable-waste-routemap-launch/>) was published in July 2021. This sets out actions for pre-construction design, use of materials in construction and demolition practices.

[The Aggregates Levy](https://www.gov.uk/topic/business-tax/aggregates-levy/) (<https://www.gov.uk/topic/business-tax/aggregates-levy/>), introduced in 2002, remains in place after a review. It is intended in to encourage the reuse of aggregate materials. The levy is charged at a flat rate for every tonne of rock, sand and gravel extracted.

The [National Model Design Code](https://www.gov.uk/government/publications/national-model-design-code) (<https://www.gov.uk/government/publications/national-model-design-code>) (2021) provides tools and guidance for planning authorities to embed circular economy principles and other environmental goals. Public sector construction projects have to comply with Building Information Modelling Level Two.

## What the government will do

To embed action to increase resource efficiency within the wider policy framework in an integrated way:

1. As part of the four-year £30 million National Interdisciplinary Circular Economy Research (NICER) Programme, concluding at the end of 2024 outlined in chapter 1, we will continue to support the Interdisciplinary Circular Economy Centres for Mineral-based Construction Materials (ICEC-MCM) and Metals (CircularMetal). The Programme is made up of 5 Circular Economy Research Centres, each focused on a speciality material flow. Each centre aim to deliver research, innovation, and the evidence base for their material to move the UK towards a resilient UK circular economy.
2. Through the Green Construction Board, Government will promote adoption of strategies aligned with the Routemap to Net Zero Avoidable Waste in Construction. We will carefully monitor progress against key targets in the routemap to eliminate all but hazardous construction and demolition waste to landfill and reduce soil to landfill by 75%, ultimately working towards zero avoidable construction and demolition waste by 2050.
3. Government will work with industry to explore what policy interventions would best support a shift in the design of construction products to encourage greater reuse and use of recycled materials. This could potentially include options like, resource efficiency product standards or information schemes with regard to existing Environmental Product Declarations. This could be to ensure, for

instance that windows are designed so they can be dismantled to preserve the glass, or precast concrete panels designed so that they can be reused, as well as encouraging a shift towards recyclable materials. However, as with the other policy suggestions throughout this document, this would be subject to decisions at the next Spending Review to be able to take this work forward.

4. The Department for Levelling Up, Housing and Communities will continue to support local authorities to promote sustainable resource use through planning.

The [National Planning Policy for Waste](#)

(<https://www.gov.uk/government/publications/national-planning-policy-for-waste>)

requires that when determining planning applications for non-waste development, local planning authorities should, to the extent appropriate to their responsibilities, ensure that the handling of waste arising from the construction and operation of development maximises reuse and recovery opportunities, and minimises off-site disposal. Additionally, chapter 2 of the National Planning Policy Framework (NPPF) recognises the need for the planning system to consider the prudent use of natural resources and waste minimisation in the pursuit of sustainable development. The National Planning Policy Framework and the National Planning Policy for Waste are material considerations for local planning authorities when making decisions on planning applications and when preparing their local plans.

5. In accordance with the [Industrial Decarbonisation Strategy](#)

(<https://www.gov.uk/government/publications/industrial-decarbonisation-strategy>), the

Department for Energy Security and Net Zero will develop proposals for demand-side measures intended to grow the market for low emissions industrial products which include reusable products and secondary materials.

The measures include product standards and labelling which could help buyers of industrial products, including the construction sector, better understand the embodied emissions of the products they buy. The then Department for Business, Energy and Industrial Strategy conducted a Call for Evidence

[Towards a market for low emissions industrial products](#)

(<https://www.gov.uk/government/consultations/towards-a-market-for-low-emissions-industrial-products-call-for-evidence>) in December 2021, to gather information from

stakeholders on how low emissions products can be defined, and the emissions reporting required to achieve this. A summary of responses was published in July 2022. In March 2023, the government published an exploratory

consultation considering a range of potential policy measures to mitigate carbon leakage risk in the future and ensure UK industry has the optimal policy environment to decarbonise. Potential policies include a carbon border adjustment mechanism (CBAM), mandatory product standards (MPS), and other policy measures to help grow the market for low carbon products, as well as embodied emissions reporting that could support the implementation of these policies.

6. Cabinet Office will continue to take forward green procurement in accordance with the [National Procurement Policy Statement](#)

(<https://www.crowncommercial.gov.uk/news/the-national-procurement-policy-statement-what-you-need-to->

[know#:~:text=The%20National%20Procurement%20Policy%20Statement%20asks%20t hat%20all,priorities%20when%20exercising%20their%20functions%20relating%20to%2 0procurement.\)](#) (NPPS), which established principles that contracting authorities must consider in their procurement including reducing emissions. Additionally, Cabinet Office Policy Procurement Note '[Taking account of Carbon Reduction Plans in the procurement of major government contracts](#)' (<https://www.gov.uk/government/publications/procurement-policy-note-0621-taking-account-of-carbon-reduction-plans-in-the-procurement-of-major-government-contracts>) (PPN06/21) requires bidders for major government contracts to commit to achieving Net Zero in their operations by 2050. This applies to Central Government Departments (plus Executive Agencies and non-departmental public bodies).

7. Government committed in the Net Zero Strategy to work with industry to improve reporting on embodied carbon in the built environment and explore maximum levels for new builds in the future. Following this, government announced its intention to consult in 2023 on our approach to the assessment and reduction of embodied carbon. This is part of the Department for Levelling Up, Housing and Communities' wider work, including the Future Homes and Buildings Standards programmes to ensure all new buildings are aligned with a zero-carbon future. The UK plays a leading role in the Industrial Deep Decarbonisation Initiative, which is an international initiative, focused on standardising carbon assessments throughout the lifecycle of industrial products, starting with steel, cement and concrete, establishing a low carbon standard for steel, concrete and cement, establishing internationally coordinated targets for embodied carbon in public construction and incentivise investment into low carbon industrial product development. As part of the Industrial Decarbonisation initiative, at COP26, in November 2021, the UK pledged, and encouraged other nations to sign up to work on the harmonisation of embodied emissions reporting, public construction practices and standard setting as well as setting a baseline and interim embodied carbon emission reduction aspiration for major public construction projects for 2030. DESNZ consulted on this pledge in the [carbon leakage consultation](#) (<https://www.gov.uk/government/consultations/addressing-carbon-leakage-risk-to-support-decarbonisation>) that was published in March 2023.

8. Defra will publish a revised Code of Practice for the Sustainable Use of Soil on Construction Sites and begin development of a soil reuse and storage depot scheme in 2023. These will help prevent soil that would otherwise be classified as waste going to landfill and encourage remediation and re-use of soil. Defra will pilot the soil reuse and storage depot scheme by 2026.

## 6. Textiles



**Our aim:** to support our waste reduction targets and Net Zero commitment, through reducing textiles going to residual waste. This means increasing product utilisation, diverting products and materials from residual waste and stimulating a profitable textile recycling industry. We want to see our UK textiles and fashion industry leading the way on circularity through adopting circular business models such as resale, rental and repair, and investing in textiles reprocessing and recycling in alignment with the waste hierarchy.

Through the [Net Zero Strategy \(https://www.gov.uk/government/publications/net-zero-strategy\)](https://www.gov.uk/government/publications/net-zero-strategy), government has committed to the near elimination of municipal biodegradable waste to landfill from 2028 and we have set an [Environment Act 2021 environmental target \(https://www.gov.uk/government/consultations/environment-act-2021-environmental-targets\)](https://www.gov.uk/government/consultations/environment-act-2021-environmental-targets) to halve residual waste (excluding major mineral wastes) kg per person by the year 2042. To deliver on our waste targets and Net Zero commitments, we need to significantly reduce textiles going to residual waste.

The fashion and textiles industry is resource intensive, consuming vast quantities of non-renewable natural resources and leading to high levels of greenhouse gas emissions, pollution and waste. These impacts are evident across the lifecycle from production to end of life.

The industry faces huge challenges. [Data from Quantis \(https://quantis.com/report/measuring-fashion-report/\)](https://quantis.com/report/measuring-fashion-report/) estimated that the sector accounts for between 4% to 8% of global greenhouse gas emissions. Extensive and often opaque international supply chains spanning multiple continents, provide challenges to transparency and traceability.

Textiles waste is significant. A [2017 Waste and Resources Action Programme report \(https://wrap.org.uk/resources/report/quantifying-composition-municipal-waste#:~:text=An%20in-depth%20analysis%20of%20non-household%20municipal%20waste%20collected,with%20a%20combined%20weight%20of%20over%2025%2C000%20tonnes\)](https://wrap.org.uk/resources/report/quantifying-composition-municipal-waste#:~:text=An%20in-depth%20analysis%20of%20non-household%20municipal%20waste%20collected,with%20a%20combined%20weight%20of%20over%2025%2C000%20tonnes) found that in England alone over 1 million tonnes of textiles were estimated to be disposed of in, household and commercial municipal residual waste, with clothing equating to almost 400,000 tonnes and non-clothing textiles almost 430,000 tonnes. This is equivalent to 4.2% of all municipal waste arising (by weight) and this material ends up going to landfill or incineration, contributing to waste sector emissions.

Keeping products and materials in circulation through reuse provides substantial environmental and economic benefits. A new [life cycle based assessment study of the management of European used textiles \(https://www.euric-aisbl.eu/position-papers/item/643-study-lca-based-assessment-of-the-management-of-european-used-textiles\)](https://www.euric-aisbl.eu/position-papers/item/643-study-lca-based-assessment-of-the-management-of-european-used-textiles) found that producing a new t-shirt has approximately a 70 times larger environmental impact than a reused t-shirt (this is based on t-shirts of higher grades, crème and B-grade). More than 3kg of CO2 is saved for each medium-high value t-shirt that is reused.

While we have a strong collection system in the UK with 620,000 tonnes of used textiles separately collected for reuse and recycling each year, [data from the Waste and Resources Action Programme](https://wrap.org.uk/resources/market-situation-reports/textiles-2019) (<https://wrap.org.uk/resources/market-situation-reports/textiles-2019>) shows 60% is exported. We need to increase domestic sorting and reprocessing of textiles not suitable for reuse to capitalise on the growing demand for recycled content and extract maximum value from material flows.

Recycling textiles not appropriate for reuse is a vital route to keeping material out of landfill and incineration. However, economies of scale for textiles recycling do not currently exist. Research by the [Ellen MacArthur Foundation](https://ellenmacarthurfoundation.org/a-new-textiles-economy) (<https://ellenmacarthurfoundation.org/a-new-textiles-economy>) found that globally less than 1% of the material used to produce clothing is recycled back into clothing. Most textiles recycling involves shredding material for low value uses including rags for manufacturing industries or insulation.

As noted in the Waste and Resources Action Programme's [Textiles Market Situation Report](https://wrap.org.uk/resources/market-situation-reports/textiles-2019) (<https://wrap.org.uk/resources/market-situation-reports/textiles-2019>) resale, rental and repair diversify business portfolios and enable income streams that are not dependent on the extraction of virgin materials. [The Business of Fashion](https://www.businessoffashion.com/reports/retail/the-future-of-fashion-resale-report-bof-insights/) (<https://www.businessoffashion.com/reports/retail/the-future-of-fashion-resale-report-bof-insights/>) reported that the global resale market for clothing will reach \$57 billion in sales by 2025, up from \$27 billion today. Some businesses are already making moves in this direction, for instance in Selfridges' first annual [Project Earth Report](https://selfridgespress.com/2022/09/02/two-years-into-project-earth-selfridgeszeroes-in-on-a-circular-future-for-shopping/) (<https://selfridgespress.com/2022/09/02/two-years-into-project-earth-selfridgeszeroes-in-on-a-circular-future-for-shopping/>) in September 2022 announced that by 2030, 45% of transactions will come from circular products and services, meaning resale, rental, repair, refill or products with recycled material. We want to see many more providing circular products and services, helping consumers access better value.

## What has the government done to date?

In 2021 we funded [Textiles 2030](https://wrap.org.uk/taking-action/textiles/initiatives/textiles-2030/whos-signed-transform-uk-textiles) (<https://wrap.org.uk/taking-action/textiles/initiatives/textiles-2030/whos-signed-transform-uk-textiles>), the UK Sustainable Textile Action Plan; a voluntary business programme run by the Waste and Resources Action Programme, with signatories representing more than 62% of clothing placed on the UK market. Signatories commit to ambitious, science-based 2030 targets, including a 50% reduction in carbon footprint of new products and 30% reduction in water footprint. Through collaboration, signatories will deliver the Textiles 2030 Roadmap, which is guiding business action towards the 2030 targets in 3 main areas:

- design for circularity (longevity, recyclability, improved fibres)

- circular business models (resale, rental, subscription, repair, upcycling)
- closing the loop on materials (recycling clothes back into clothes)

We have worked with industry to drive voluntary action since 2012 through the Waste and Resources Action Programme. The Sustainable Clothing Action Plan (SCAP 2020) preceded Textiles 2030 and ran from 2012 to 2020. Found signatories reduced their water and carbon footprints per tonne of clothing by 18.2% and 21.6% respectively (to a 2012 baseline), exceeding the 15% target. Reduction in waste was less successful, with a 2.1% reduction in waste produced over whole product lifecycles against a target of 3.5%. Learnings from the Sustainable Clothing Action Plan 2020 have been applied to Textiles 2030. The [Sustainable Clothing Action Plan's final report](https://wrap.org.uk/resources/report/scap2020-final-report) (<https://wrap.org.uk/resources/report/scap2020-final-report>) found signatories reduced their water and carbon footprints per tonne of clothing by 18.2% and 21.6% respectively (to a 2012 baseline), exceeding the 15% target. Reduction in waste was less successful, with a 2.1% reduction in waste produced over whole product lifecycles against a target of 3.5%. Learnings from SCAP 2020 have been applied to Textiles 2030.

The Competition and Markets Authority (CMA) is concerned about the way that products are being marketed to customers as eco-friendly. [Their review of the fashion sector](https://www.gov.uk/cma-cases/asos-boohoo-and-asda-greenwashing-investigation) (<https://www.gov.uk/cma-cases/asos-boohoo-and-asda-greenwashing-investigation>) and potentially misleading environmental claims will continue as the Competition and Markets Authority will also consider whether to open further investigations. The Competition Markets Authority have also produced [guidance to companies in all sectors about 'greenwashing' claims](https://www.gov.uk/government/publications/green-claims-code-making-environmental-claims) (<https://www.gov.uk/government/publications/green-claims-code-making-environmental-claims>).

## What the government will do

For the purpose of the measures set out below, textiles have been defined as clothing and household textiles that are flat, but this is not an exhaustive list, and scope will be considered in the future work below. These proposals will be subject to the outcomes of current and future spending allocations, and availability of Parliamentary time and support.

1. The [UK Research and Innovation National Interdisciplinary Circular Economy Research programme](https://www.ukri.org/news/circular-economy-centres-to-drive-uk-to-a-sustainable-future/) (<https://www.ukri.org/news/circular-economy-centres-to-drive-uk-to-a-sustainable-future/>) mentioned in chapter 1 also includes a £2.5M circular economy innovation fund to support projects aligned with the programme. One example of these is £150,000 for an industry-led pilot to develop a model for an Extended Producer Responsibility scheme for textiles. This pilot will be developed in collaboration with leading trade bodies including the UK Fashion and Textiles Association, the British Fashion Council and the British Retail

Consortium. We will work with industry to facilitate an industry led approach for holding producers responsible for the full net costs of managing the textiles waste they generate and will assess the costs and benefits of this approach as part of longer-term policy development.

2. Develop a textiles waste hierarchy to provide robust guidance to businesses managing textiles and fashion products and material. We will explore putting the textiles hierarchy on a firm statutory footing, starting by considering the measures set out below.

3. Subject to an impact assessment, we will explore the potential of the following measures for certain non-domestic premises to support the textiles waste hierarchy and aim to consult in 2024. This includes, but is not limited to:

- a requirement to present reusable and recyclable textiles for separate collection and for the collecting organisation to separately collect and store until treating in accordance with the waste hierarchy, by sorting for reuse and recycling
- requiring businesses over a certain size to provide customer take back systems for used textiles. We will also explore how to encourage online-only companies to partner with brick-and-mortar businesses to ensure the costs of implementing take back schemes are proportionate
- banning separately collected material from being sent to landfill and energy from waste without prior sorting. This would bring into scope the destruction of products and material that can be reused, redistributed and recycled, such as returns, surplus and unsold stock

We will also consider whether wider measures to reduce waste generation would be helpful.

4. Enhance voluntary action to reduce textiles waste by continuing to fund Textiles 2030 to reduce carbon and water footprints and accelerate action on circularity. We will seek to expand the programme to tackle issues such as overproduction and waste. Initially this will be by driving voluntary standardised measurement and reporting of waste generation across the supply chain, with an initial focus on unsold and surplus stock. Once a voluntary approach is established, we will evaluate the benefits and methodology to explore whether mandatory reporting of waste is required.

5. We have funded the Interdisciplinary Textiles Circularity Centre, a 4-year, £5.4 million research programme to harness academic excellence and industry expertise to boost innovation in the development of renewable textiles materials from post-consumer textiles and household waste.

6. Through the UK Research and Innovation's Circular Fashion Programme, government will fund £15 million to drive action to tackle some of the industry's biggest challenges in adopting circular business models. This initial 2-year programme includes £4 million for a sorting and recycling demonstrator, £6

million for enabling research, £2 million for an industry led Innovation Network, and £3 million for projects partnering UK fashion companies with UK universities to lead research and innovation. The programme will act as a basis to initiate a 10-year vision of transforming the fashion and textiles sector, supporting the adoption of economically viable and scalable circular models by 2032.

## 7. Furniture and furnishings

**Our aim:** to stimulate more sustainable design and enable enhanced collection, reuse, and repair services with a supporting infrastructure, whilst also building up skills and supporting the levelling up agenda.

### [Data from the Waste and Resources Action Programme](https://wrap.org.uk/resources/report/quantifying-composition-municipal-waste#download-file)

[\(https://wrap.org.uk/resources/report/quantifying-composition-municipal-waste#download-file\)](https://wrap.org.uk/resources/report/quantifying-composition-municipal-waste#download-file) shows over 861,000 tonnes of furniture (including mattresses, carpets and underlay) were estimated to be disposed of in household and commercial municipal residual waste in England (2017), around 3.4% by weight of all municipal waste arising. Fly-tipping is common for some items like mattresses, which we are tackling through the increased penalties set out in the Prime Minister's [Anti- Social Behaviour Action Plan](https://statics.teams.cdn.office.net/evergreen-assets/safelinks/1/atp-safelinks.html)  [\(https://statics.teams.cdn.office.net/evergreen-assets/safelinks/1/atp-safelinks.html\)](https://statics.teams.cdn.office.net/evergreen-assets/safelinks/1/atp-safelinks.html), more details are set out in Chapter 10. [According to Defra statistics,](https://www.gov.uk/government/statistics/uks-carbon-footprint)  [\(https://www.gov.uk/government/statistics/uks-carbon-footprint\)](https://www.gov.uk/government/statistics/uks-carbon-footprint) the Greenhouse Gas (GHG) emissions associated with the consumption of UK residents on furniture, furnishings and carpets, wherever in the world these emissions arise along the supply chain, was 8.7 MtCO<sub>2</sub>e in 2019, almost 1.5% of the UK's total consumption-based footprint.

[Modelling](https://wrap.org.uk/resources/report/uk-policy-pathways-increasing-resource-productivity-2050#download-file)  [\(https://wrap.org.uk/resources/report/uk-policy-pathways-increasing-resource-productivity-2050#download-file\)](https://wrap.org.uk/resources/report/uk-policy-pathways-increasing-resource-productivity-2050#download-file) by the Waste and Resources Action Programme and the University of Leeds (2022) found a potential reduction to territorial greenhouse gas emissions relating to Furniture of 4 MtCO<sub>2</sub>e between 2021 and 2050, based on the introduction of resource efficiency policies. The modelling also indicated a reduction to global greenhouse gas emissions resulting from UK consumption of 44 MtCO<sub>2</sub>e as well as reducing raw material consumption by 95 Mt over the same period.

For those consumers and businesses who want to give their furniture a second life, avenues to donate or sell on items have grown substantially since the Waste Prevention Programme in 2013. [The Reuse Network](https://reuse-network.org.uk/our-2020-social-impact-report/#:~:text=The%20Reuse%20Network%20is%20delighted,million%20furniture%20and%20electrical%20items)  [\(https://reuse-network.org.uk/our-2020-social-impact-report/#:~:text=The%20Reuse%20Network%20is%20delighted,million%20furniture%20and%20electrical%20items\)](https://reuse-network.org.uk/our-2020-social-impact-report/#:~:text=The%20Reuse%20Network%20is%20delighted,million%20furniture%20and%20electrical%20items) estimate that they have provided reused furniture to 1.5 million households, leading to £427 million in savings (includes savings

resulting from reuse of electrical appliances as well as furniture, however furniture makes up the vast majority of items). Several barriers limit waste prevention and reuse in the furniture industry, including a lack of storage.

[Data shows \(https://op.europa.eu/en/publication-detail/-/publication/1de15fcf-9377-11e7-b92d-01aa75ed71a1\)](https://op.europa.eu/en/publication-detail/-/publication/1de15fcf-9377-11e7-b92d-01aa75ed71a1) an estimated 80 to 90% of the environmental impacts in the lifecycle of furniture items are linked to the design and components of the products. The variety of materials, prevalence of composite materials and sandwich designs (a sandwich-structured composite is a special class of composite materials that is fabricated by attaching two thin but stiff skins to a lightweight but thick core such as wood replacements, mattresses), and high chemical content (such as flame retardants and persistent organic pollutants) can significantly limit opportunities at end of life.

A rise in a disposable culture, and a lack of time, skills, and repair services as well as a perception that “second hand” is inferior continue to encourage the buying of new items rather than extending the usable lifetime of existing products.

Many businesses are taking action to reduce waste including through trade associations, reuse initiatives, innovative business models, sustainability programmes, and investment in research and reuse organisations. The Furniture Industry Research Association (FIRA), for example, is helping to collect evidence and support businesses to trial new models and action-based research projects, and the [National Bed Federation’s Eco Design Principles \(https://www.bing.com/search?q=national+bed+federation+ecodesign+principles&cvid=a3bdec725a284e0995aaaaeaecc09b21d&aqs=edge.0.69i59j0j69i57j0l6j69i11004.5791j0j1&FORM=ANAB01&PC=U531\)](https://www.bing.com/search?q=national+bed+federation+ecodesign+principles&cvid=a3bdec725a284e0995aaaaeaecc09b21d&aqs=edge.0.69i59j0j69i57j0l6j69i11004.5791j0j1&FORM=ANAB01&PC=U531) and assessment toolkit enable producers to score their products against ecodesign criteria. Some businesses, such as Ikea, have gone as far as setting highly ambitious targets and implementing extensive design, reuse, and repair initiatives.

## **What has the government done to date?**

We have undertaken research to explore requirements for improved labelling and consumer information for furniture, to support more sustainable product choices and is due to be published in 2023.

Government has set an example through its Greening Government Commitments and Government Buying Standards, for stationary, equipment, and furniture.

In addition, all Central Government Departments, their Executive Agencies and Non-Departmental Public Bodies should apply [Procurement Policy Note 06/21 \(https://www.gov.uk/government/publications/procurement-policy-note-0621-taking-](https://www.gov.uk/government/publications/procurement-policy-note-0621-taking-)

[account-of-carbon-reduction-plans-in-the-procurement-of-major-government-contracts](#)) in-scope procurements of £5 million per annum and above. When applied, this policy requires all suppliers bidding for the procurement to produce and publish a [Carbon Reduction Plan \(https://www.gov.uk/government/publications/procurement-policy-note-0621-taking-account-of-carbon-reduction-plans-in-the-procurement-of-major-government-contracts\)](#). Supplier's Carbon Reduction Plans confirm their commitment to achieving Net Zero by 2050, detail their greenhouse gas emissions in the UK (including emissions associated with waste generated by their operations) and detail the environmental management measures that they have in place. The adoption of this measure will increase the number of suppliers making public commitments to decarbonise and achieve Net Zero by 2050. As [research \(https://www.bitc.org.uk/report/a-guide-to-recycling-waste-management-and-resource-productivity/\)](#) notes it is also hoped that it will lead to greater reuse and recycling in the sector as suppliers take steps to meet these commitments and work with their supply chain partners to decarbonise their operations.

Donating all of the IKEA furniture from the COP26 summit to homeless charities for reuse.

## **What the government will do**

To take forward our commitment to improve waste prevention in the furniture and furnishings sector as outlined in the Resources and Waste Strategy, we will:

1. Encourage sharing of best practice on product design and take-back systems, through trade associations, voluntary agreements, and industry standards, such as initiatives to reduce waste mattresses led by the National Bed Federation.
2. As set out in Chapter 3 we plan to develop best practice guidance for local authorities to encourage reuse through Household Waste Recycling Centres and bulky waste collections and enhance the role of local communities, businesses and social enterprise in achieving more reuse.
3. In accordance with our commitments in the Resources and Waste Strategy, and as set out in our cross-cutting approach to designing out waste in Chapter 2, we will consider policy options including ecodesign, consumer information and Extended Producer Responsibility for furniture. The aim of these would be to:
  - reduce furniture waste and increase recycling by, for example, incentivising more environmentally sound design of furniture and furnishings

- address issues with funding and space at end-of-use, as well as ease of dismantling, cleaning of fabrics and chemical content

4. We will develop the evidence base further to support this activity, and we have commissioned research, to be completed in 2023, to help us assess the most appropriate policy options and the scope of a potential policy framework, seeking to include at least the most problematic products such as mattresses, for example.

5. Continue to address green procurement making use of the National Procurement Policy Statement (NPPS). This is relevant to furniture on the government estate.

6. Consult on proposals to remove fees for consumers to have bulky domestic furniture collected from their homes by 2025. These may be standalone proposals or could be considered in conjunction with other measures referenced elsewhere in this programme.

## 8. Electrical and electronic products

**Our aim:** to increase reuse, repair and remanufacture of electronic and electrical products, and develop options to design out waste using ecodesign principles, as well as improving levels of collection of Waste Electronic and Electrical Equipment.

Data estimates ([https://www.itu.int/hub/publication/d-gen-e\\_waste-01-2020/](https://www.itu.int/hub/publication/d-gen-e_waste-01-2020/)) that the UK generated approximately 23.9kg per capita of electrical and electronic waste in 2019. The UK has performed well in comparison to EU member states in terms of collections for recycling. Of the waste electrical and electronic equipment generated in 2017, data shows (<https://www.valpak.co.uk/knowledge-hub-post/eee-flow-2018/>):

- 42% was treated and reported within the system
- approximately 34% was likely to be treated or reused in some way but not reported
- around a quarter (24%) was potentially lost to the residual waste stream

The challenge is to increase waste prevention – reuse, repair and remanufacture. It is estimated (<https://wrap.org.uk/sites/default/files/2020-10/WRAP-realising-reuse-value-household-WEEE-summary.pdf>) that almost a quarter of electronic products people throw away could be suitable for reuse. Preventing electronic waste can help cut carbon emissions. A study shows (<https://wedocs.unep.org/handle/20.500.11822/22394>) resource extraction for, and manufacturing of, electronic products such as mobile phones contributes to



more than 50% of their total lifetime CO2 emissions. The rise in purchases of electronic goods is a significant driver of emissions globally.

Rising consumption globally has a bearing on resource security: Electrical and Electronic Equipment contains valuable critical minerals like gold, lithium and platinum. Diverting Waste Electrical and Electronic Equipment from landfill and incineration by remanufacture, repair, and recycling, retains these materials within the economy. [Data shows \(https://ewastemonitor.info/gem-2020/\)](https://ewastemonitor.info/gem-2020/) the value of materials in global e-waste stood at roughly \$57 billion in 2019.

Increasing rates of reuse, repair and remanufacture remains a challenge because of the dominant linear business models geared towards high sales volume and low upfront costs. Moreover, high costs, due to labour costs and complex logistics, discourage consumers from repairing products. A lack of consumer trust in claims of durability, reparability and in second-hand goods as well as a lack of awareness of how to treat products at end of life are a further challenge.

[Modelling by the Waste and Resources Action Programme and the University of Leeds \(https://wrap.org.uk/resources/report/uk-policy-pathways-increasing-resource-productivity-2050#download-file\)](https://wrap.org.uk/resources/report/uk-policy-pathways-increasing-resource-productivity-2050#download-file) (2022) found a potential reduction to territorial greenhouse gas emissions relating to Electrical and Electronic Equipment of 0.7 MtCO<sub>2e</sub> between 2021 and 2050, based on the introduction of certain resource efficiency policies. The modelling also indicated a reduction to global greenhouse gas emissions resulting from UK consumption of 17 MtCO<sub>2e</sub> as well as reducing raw material consumption by 23 Mt over the same period.

## What has the government done to date?

The system established by the [UK Waste Electrical and Electronic Equipment Regulations \(https://www.legislation.gov.uk/uksi/2013/3113/contents\)](https://www.legislation.gov.uk/uksi/2013/3113/contents) has fostered improvements to levels of collection and proper treatment of electrical and electronic equipment. This includes use of funds raised through the Waste Electrical and Electronic Equipment Compliance Fees on awareness raising and local projects designed to support reuse and recycling. Additionally, as of 1 January 2021, retailers who sell over £100,000 of electrical and electronic equipment annually are required to provide take-back systems for customers that purchase new equipment.

Some progress was made on product design and a shift higher up the waste hierarchy, through the Waste and Resources Action Programme-led voluntary Sustainable Electricals Action Plan (subsequently renamed the Electrical and Electronic Equipment Sustainability Action Plan or 'ESAP' and later closed). This resulted in outputs including the Better Appliances Guides and guidance on how to improve product durability. Examples of recent industry initiatives include the [Association of Manufacturers of Domestic Appliances Know What's](#)

[Watt campaign \(https://www.amdea.org.uk/campaigns/know-watts-what/\)](https://www.amdea.org.uk/campaigns/know-watts-what/), focusing on extended appliance life through maintenance and repair.

The government introduced new ecodesign requirements for a range of industrial appliances, white goods, electronic displays and lighting products during 2021. These [Ecodesign Regulations \(https://www.legislation.gov.uk/uksi/2021/745/contents/made\)](https://www.legislation.gov.uk/uksi/2021/745/contents/made) set higher Minimum Energy Performance Standards (MEPS), as well as measures to increase the repairability and recyclability of products, including requirements relating to the availability of spare parts and repair instructions; the ease of disassembly; the provision of software and firmware updates.

In 2020 to 2021, the then Department for Business, Energy and Industrial Strategy and Defra commissioned research to help identify energy-related products where the greatest opportunity lies for improvements in energy performance and to carry out an assessment of options relating to lifetime extension and resource efficiency of electricals. Two reports were produced, on [energy efficiency aspects \(https://etl.beis.gov.uk/shared-files/3316/3713/8281/UK\\_ErP\\_Policy\\_Study\\_final\\_v4-stc\\_2\\_11\\_21.pdf\)](https://etl.beis.gov.uk/shared-files/3316/3713/8281/UK_ErP_Policy_Study_final_v4-stc_2_11_21.pdf) and on [resource efficiency aspects \(https://etl.beis.gov.uk/shared-files/7716/3713/8273/UK\\_ErP\\_Policy\\_Study\\_HM\\_Case\\_Studies\\_final-stc\\_2\\_11\\_21.pdf\)](https://etl.beis.gov.uk/shared-files/7716/3713/8273/UK_ErP_Policy_Study_HM_Case_Studies_final-stc_2_11_21.pdf). This research supplements the evidence gathered during the 2020 call for evidence on ecodesign for energy-related products by the then Department for Business, Energy and Industrial Strategy.

In 2023 [Defra published research \(https://randd.defra.gov.uk/ProjectDetails?ProjectId=21169\)](https://randd.defra.gov.uk/ProjectDetails?ProjectId=21169) into how eco-modulation could be implemented into the UK's Waste Electrical and Electronic Equipment system to incentivise better ecodesign of energy related products. It also explores options aimed at reducing the environmental impact of energy-related products across their lifecycle with particular focus on production and disposal.

## **What the government will do**

To continue to embed the waste hierarchy and circular economy principles into sector and the existing Waste Electrical and Electronic Equipment producer responsibility scheme, we will:

1. Consult in 2023 on reforms to the Waste Electrical and Electronic Equipment Regulations. The consultation will explore ways to increase collections of waste electricals from households and businesses for reuse and recycling, including how to increase levels of consumer awareness about producer-financed responsible disposal options. It will consider how to ensure producers, including those selling electricals through online marketplaces, take greater responsibility for their products when they become waste. We also want to ensure that the future Waste Electrical and Electronic Equipment system is compatible with our

circular economy objectives and will gather views in a separate Call for Evidence as to how we can encourage better product design, more circular economy business models and increased levels of re-use through reforms of the Waste Electrical and Electronic Equipment regulations’.

2. This will include options to tackle vapes, also known as e-cigarettes, which have been around since the early 2000s and were designed to be used as a smoking cessation tool, to help people to quit smoking. Vapes were originally designed to be reusable meaning people could invest in a vape device and then refill and recharge for repeated use. Recently, there has been a surge in popularity of so-called disposable vapes (or single use vapes). They are used by a range of demographics, including those under eighteen. The rise in popularity of disposable vapes amongst those under eighteen is of particular concern to the government. In response to these concerns the Department of Health and Social Care published a Call for Evidence, which closed on 6 June 2023, that aims to gather evidence on the impacts of vaping on those under eighteen and the environment and inform future policy interventions.

Disposable vapes contain plastic, lithium and other rare earth elements meaning that if these products are not disposed of and recycled properly, there is a loss of critical resources. Vapes also contain lithium-ion batteries that can pose a fire risk if the waste is not managed appropriately. Ensuring that vapes are disposed of appropriately would therefore lead to numerous benefits to the natural environment.

In our forthcoming consultation on reforming the existing producer responsibility regime for waste electrical and electronic equipment we will bring forward proposals to ensure that these products are dealt with appropriately at the end of their life financed by the vape industry. This will include strengthening the existing take-back requirements placed on retailers and internet sellers of electricals.

3. Work with the Department for Energy Security and Net Zero on future implementation of minimum ecodesign requirements in Great Britain as set out in the [energy-related products policy framework](https://www.gov.uk/government/publications/energy-related-products-policy-framework) (<https://www.gov.uk/government/publications/energy-related-products-policy-framework>), published in November 2021.

4. Consider ways in which to provide consumers and businesses with information on the environmental performance of electrical and electronic products, focussing on material resource efficiency aspects such as durability, reparability and recyclability. Options include rating schemes and other labelling options focused on extending the life of products and would complement existing energy labelling requirements. Initial research has been completed and will be published in 2023. In tandem, we will also explore the role of product passports that relate to critical mineral content.

5. We will continue to work with the Interdisciplinary Circular Economy Centre for Technology Metals (Met4Tech), as part of the four-year £30 million National

Interdisciplinary Circular Economy Research (NICER) Programme, concluding at the end of 2024.

## 9. Road vehicles

**Our aim:** explore means of increasing reuse, repair, and remanufacture, in addition to design considerations such as light-weighting, to reduce waste in this sector and contribute towards Net Zero by 2050.

[Data from The Use Less Group \(https://www.uselessgroup.org/research/vehicles\)](https://www.uselessgroup.org/research/vehicles) shows the extraction and processing of materials and the manufacturing process to make a standard combustion engine car contribute approximately a fifth of the emissions resulting from its use, over a lifespan of 14 years. These are significant: global emissions associated with the manufacture of all new cars that were registered in the UK in 2019 was between 10 to 13 MtCO<sub>2</sub>e ([Defra estimate based on evidence from The Use Less Group; the Waste and Resources Action Programme and the Society of Motor Manufacturers and Traders \(https://www.uselessgroup.org/sectors/automotive\)](#)).

[Modelling \(https://wrap.org.uk/resources/report/uk-policy-pathways-increasing-resource-productivity-2050#download-file\)](https://wrap.org.uk/resources/report/uk-policy-pathways-increasing-resource-productivity-2050#download-file) by the Waste and Resources Action Programme and the University of Leeds (2022) found a potential reduction to territorial greenhouse gas emissions relating to vehicle production of 26 MtCO<sub>2</sub>e between 2021 and 2050, based on the introduction of resource efficiency policies. The modelling also indicated a potential reduction to global greenhouse gas emissions resulting from UK consumption of 75 MtCO<sub>2</sub>e as well as reducing raw material consumption by 108 Mt over the same period.

Meanwhile, the transition from vehicles powered purely by internal combustion engines to hybrid and fully electric powertrains, or other alternatives, is accelerating. The government has announced the end of sales of new petrol and diesel cars and vans from 2030. This transition creates new challenges regarding reuse as well as management of batteries, and it is essential that new EV models and technologies contribute toward the shift to a circular and resource efficient economy.

The continued development, promotion and implementation of innovative retrofit technology is important for extending the life of some vehicles which otherwise might be scrapped. Retrofit technology can minimise a vehicles air quality impact and will help bridge the gap in the journey towards zero emissions by 2050.

Regulatory measures have, to date, focused on operational energy use and end of life, with targets for recovery and recycling. We have seen an improvement in the treatment of scrap vehicles and dramatically increased

recycling and recovery rates. [Data shows \(https://www.smmmt.co.uk/industry-topics/sustainability/report-archive/\)](https://www.smmmt.co.uk/industry-topics/sustainability/report-archive/) the recycling rate for end of life vehicles rose 20% from 1999 to 2018, with overall waste to landfill falling more than 95% over the same period.

In terms of reuse, the active domestic market for second-hand cars and car parts, means vehicles are routinely repaired and maintained. The [Society of Motor Manufacturers and Traders \(https://www.smmmt.co.uk/category/vehicle-data/used-car-sales-data/\)](https://www.smmmt.co.uk/category/vehicle-data/used-car-sales-data/) reported almost 7 million used car transactions in 2022. Additionally, the sector has seen a rise in resource efficient business models including rental and car clubs, which deliver environmental benefits whilst also potentially reducing the cost of living. These business models are growing in popularity. [Published data \(https://www.como.org.uk/shared-cars/overview-and-benefits\)](https://www.como.org.uk/shared-cars/overview-and-benefits) shows active car club members standing at around 300,000 in 2022.

Whilst there is evidence of positive trends regarding waste prevention in the automotive sector, there are continuing challenges. The [Driver and Vehicle Licensing Agency vehicle licensing statistics \(https://www.gov.uk/government/statistics/vehicle-licensing-statistics-2021/vehicle-licensing-statistics-2021\)](https://www.gov.uk/government/statistics/vehicle-licensing-statistics-2021/vehicle-licensing-statistics-2021) show the number of cars on UK roads is increasing, from around 24 million in 2000 to around 33 million in 2021.

Greater resource efficiency in vehicle manufacturing and use can be achieved by supporting the design of lighter vehicles, with the dual benefit of decreasing the demand for input materials and fuel consumption. Reducing the quantity of steel, aluminium and other materials used has been [estimated \(https://green-alliance.org.uk/publication/less-in-more-out/\)](https://green-alliance.org.uk/publication/less-in-more-out/) (Leeds University) to have the potential to cut carbon emissions by 8.49 MtCO<sub>2e</sub> over 2023 to 2032. Designing them to be more durable and longer lasting would also reduce the demand for materials and energy for manufacturing. The [same study \(https://green-alliance.org.uk/publication/less-in-more-out/\)](https://green-alliance.org.uk/publication/less-in-more-out/) concluded that keeping cars in use for four more years could reduce carbon emissions by 9.15 MtCO<sub>2e</sub> between 2023 and 2032. However, there are potential trade-offs with improved operational energy efficiency and other standards. The emissions cited in the report are the result of a considerable amount of work that has been carried out by the University of Leeds to collate individual carbon footprints to an economy wide-model to enable estimates of national impacts from resource efficiency. It has been used to provide recommendations to the Climate Change Committee and underpins the UK government annual consumption-based emissions inventory but they remain classed as experimental statistics and do not directly correspond with territorial emissions defined under the Kyoto protocol

The benefits of remanufacturing components is also [evident \(https://www.resourcepanel.org/reports/re-defining-value-manufacturing-revolution/\)](https://www.resourcepanel.org/reports/re-defining-value-manufacturing-revolution/). This can avoid in excess of 90% of embodied material energy, emissions and demand on new material inputs compared to new production. It has been [reported \(https://www.smmmt.co.uk/industry-topics/sustainability/report-archive/\)](https://www.smmmt.co.uk/industry-topics/sustainability/report-archive/) that remanufacturing can be twice as profitable as manufacturing. It also presents an opportunity to create quality jobs because in most cases additional process

steps are required, including evaluation, cleaning, and additional quality testing. The [Vehicle Recyclers Association also operates a certification](https://www.vracertification.org.uk/) (<https://www.vracertification.org.uk/>) scheme for recyclers giving confidence, and warranties, to consumers and businesses in choosing used parts over new.

## What has the government done to date?

The government's [Future of Mobility: Urban Strategy](https://www.gov.uk/government/publications/future-of-mobility-urban-strategy) (<https://www.gov.uk/government/publications/future-of-mobility-urban-strategy>) published in March 2019, set out 9 key principles for shaping the future of urban mobility. One of these key principles is that mobility innovation must help to reduce congestion through more efficient use of limited road space, for example through sharing rides, increasing occupancy or consolidating freight.

The government and industry are working in partnership to maximise the opportunities from the transition to zero emission vehicles. Action is focused on products, technologies, and the electric vehicle supply chain, and delivering market transformation, including charging infrastructure and consumer adoption.

## What the government will do

To support the resource efficiency of the sector taking on board the ongoing transition to cleaner vehicles, we will:

1. Bring forward proposals to reform the batteries regulations by the end of 2023, seeking to legislate from 2024 onwards with partial implementation from 2025. These reforms will allow us to address imbalances in the current operation of the regulations, to keep pace with progress in battery technology and to position the UK's regulatory regime to capitalise on the expected growth in electric vehicle batteries. We will also seek to consult on potential reforms to the End of Life Vehicles regulatory regime. This will begin with improvements to the existing processes being trialled from summer 2023 and, if successful, expanded from 2024, and with a consultation on reforming the wider regulatory regime in 2025.

2. Commit £541 million to the [Faraday Battery Challenge](https://www.faraday.ac.uk/the-faraday-battery-challenge/) (<https://www.faraday.ac.uk/the-faraday-battery-challenge/>), to support the commitment to transition to electric vehicles by 2035 and to put the UK at the global forefront of the design, development, and manufacturing of electric batteries. We are also supporting the innovation, infrastructure and regulatory environment needed for a UK battery recycling industry, including reuse in second life applications and the efficient recycling of valuable rare earths and

materials as part of a circular economy. The Faraday Institution's £10m 'ReLib' research project is developing the technological, economic and legal infrastructure to allow high percentages of the materials in lithium ion batteries at the end of their first life to be reused or recycled.

3. The Department for Energy Security and Net Zero will work with stakeholders across government, industry, and academia to explore the potential for greater resource efficiency and circular economy in the automotive sector, and the role of measures such as ecodesign in achieving this. To support this, the joint research project set out in chapter 1 includes vehicles as one of its focus sectors.

## 10. Packaging, plastics and single use items

**Our aim:** to encourage a shift away from hard to recycle and single-use products and packaging, and support research and innovation into more sustainable alternatives and systems, reducing litter and plastic pollution as well as conserving material resources.

At present, under the producer responsibility system for packaging obligated producers must take action to minimise product packaging, reduce how much packaging waste goes to landfill, and increase the amount that is recycled ([source producer responsibility obligations \(packaging waste\) regulations 2007](https://www.legislation.gov.uk/uksi/2007/871/contents/made) (<https://www.legislation.gov.uk/uksi/2007/871/contents/made>) and [the packaging \(essential requirements\) regulations 2015](https://www.legislation.gov.uk/uksi/2015/1640/contents/made) (<https://www.legislation.gov.uk/uksi/2015/1640/contents/made>)). Whilst the amount of packaging waste that is recycled has increased, the current system has shortcomings. More action is required to reduce unnecessary packaging and increase the use of reusable packaging and packaging that can be recycled easily. We will change this through our plans for an Extended Producer Responsibility (EPR) scheme for packaging.

Reuse remains a priority focus area for WRAP and the UK Plastics Pact. After supporting a series of both member-led and WRAP-led packaging reuse and refill trials during 2021 to 2022, the UK Plastics Pact is consolidating the knowledge and insights gathered through these initiatives, to move reuse to the next stage of scaled implementation. In response to the call for collaboration among members and stakeholders, to address some of the challenges identified in testing phases, WRAP is bringing together a diverse stakeholder group, drawn both from the engaged UK Plastics Pact members who are actively looking to pursue reuse, and across the wider reusable packaging sector establishing the necessary circular infrastructure elements, to develop and articulate a pathway for reuse and refill to become a widely accessible, mainstream packaging choice for UK shoppers. Current work is focused on the

standardisation elements appropriate to large scale implementation of reuse (prefill and refill), identification of the key un-lockers to accelerate the transition to reuse both for business and citizens, and the methods by which to measure and demonstrate the benefits of reusable packaging, both from an environmental and economic perspective, within a system that is rapidly shifting towards circularity. WRAP will launch a Reusable Packaging Roadmap for the UK and a series of category-focused reusable packaging blueprints by Summer 2024.

However, there are more opportunities for businesses to reduce waste and litter by preventing products from becoming waste in the first place. Actions that could be taken by businesses include:

1. Increasing the sale of unpackaged products: [advice from the Waste and Resources Action Programme and the UK Plastics Pact](https://wrap.org.uk/media-centre/press-releases/no-plastic-packaging-sell-fresh-uncut-produce-loose-says-wrap-report#:~:text=The%20UK%20Plastics%20Pact%20brings,out%20of%20the%20natural%20environment.) (<https://wrap.org.uk/media-centre/press-releases/no-plastic-packaging-sell-fresh-uncut-produce-loose-says-wrap-report#:~:text=The%20UK%20Plastics%20Pact%20brings,out%20of%20the%20natural%20environment.>) in February 2022 provides evidence that supports selling fresh fruit and vegetables loose.
2. Providing and using refill systems and services. The Waste and Resources Action Programme is supporting UK Plastics Pact members to develop reuse and refill systems. This includes work to develop a blueprint for standardising reuse and refill systems and achieving this activity at scale, developing guidance and providing UK Plastics Pact members with one-to-one support on piloting reuse and refill packaging systems or encouraging reuse behaviours, with the aim of scaling up reuse by 2025.
3. Removing the worst offending products from the market (for example, plastic straws, microbeads and plastic stirrers) that is those that cannot be reused or recycled.
4. Designing products and packaging to reduce the likelihood of them becoming waste.

These actions will help reduce litter, including marine litter. We are also tackling litter by delivering on the commitments set out in Litter Strategy for England. For example, in recent years we have launched a national anti-litter campaign with Keep Britain Tidy and published guidance for councils on the provision of litter bins, which we supported with nearly £1 million for the purchase of new bins. The Prime Minister's [Anti-Social Behaviour Action Plan](https://www.gov.uk/government/publications/anti-social-behaviour-action-plan) (<https://www.gov.uk/government/publications/anti-social-behaviour-action-plan>) sets out how we will go further by supporting councils to take tougher action against those who litter and fly-tip. This includes significantly raising the upper limit on fixed penalty notices this year (to £500 for littering and £1,000 for fly-tipping). It also outlines, subject to consultation with key stakeholders, that revenue from these fines will be reinvested locally in clean up and enforcement – meaning



perpetrators pay for local councils to continue toughening their approach in future years.

## What has the government done to date?

As well as [consulting on Extended Producer Responsibility for packaging](https://consult.defra.gov.uk/extended-producer-responsibility/extended-producer-responsibility-for-packaging/) (<https://consult.defra.gov.uk/extended-producer-responsibility/extended-producer-responsibility-for-packaging/>) and a Deposit Return Scheme for drinks containers, government introduced a world-leading tax on plastic packaging in April 2022 which applies to businesses producing or importing plastic packaging which do not meet a minimum threshold of at least 30% recycled content. This is helping to create demand for recycled plastic, is stimulating innovation and investment in reprocessing, and supporting increased recycling.

We introduced one of the world's toughest bans on microbeads in rinse-off personal care products, preventing billions of these tiny plastic beads from entering the ocean each year, and brought in measures to restrict the supply of single use plastic straws, cotton buds and stirrers in October 2020.

Building on the success of our single-use carrier bag charge, in May 2021 we increased the charge to 10p and extended it to all retailers to create a level playing field for all businesses. Since the introduction of a charge, single use carrier bag sales have reduced by 97% in the main supermarket retailers by 2021 to 2022. In addition, we have taken powers in the Environment Act 2021 to enable us to place charges on other single-use items, made from any material, to encourage businesses and citizens to shift towards reusable products. This will be a valuable tool in targeting throwaway culture and transitioning to a circular economy.

## What the government will do

To support the achievement of the above we propose to:

1. Build on our restrictions on the supply of single-use plastic straws, cotton buds and drink stirrers by banning the supply of other single-use plastic items such as single-use plastic plates, cutlery, balloon sticks and expanded and extruded polystyrene food and drinks containers from October 2023.

2. In the [government response](https://www.gov.uk/government/consultations/commonly-littered-single-use-plastic-items-call-for-evidence) (<https://www.gov.uk/government/consultations/commonly-littered-single-use-plastic-items-call-for-evidence>) to the call for evidence on commonly littered and problematic plastic items, we noted evidence provided by respondents on other items to inform future policy interventions. As stated in the [Environmental](#)

[Improvement Plan 2023 \(https://www.gov.uk/government/publications/environmental-improvement-plan\)](https://www.gov.uk/government/publications/environmental-improvement-plan), we will explore options further, including with stakeholders, for the potential for technological innovation in the production of coffee cups, and behavioural science in how they are used.

3. Following its consultation in 2021 government will introduce Extended Producer Responsibility for packaging payments from October 2025.

4. Consider measures to encourage the use of reusable and refillable packaging. This includes completing the review of the [Packaging \(Essential Requirements\) Regulations 2015 \(https://www.legislation.gov.uk/uksi/2015/1640/contents/made\)](https://www.legislation.gov.uk/uksi/2015/1640/contents/made) and considering the extent to which measures could be introduced under packaging Extended Producer Responsibility or other means to incentivise more reuse and refill of packaging.

5. Continue to support research and innovation. We are funding research into alternative materials including easier to recycle plastics, through the £60 million Smart Sustainable Plastic Packaging Fund and the £20 million Plastics Research and Innovation Fund and other funds.

6. In the Plan for Water, the government announced that it will change the law to ban the sale of wet wipes containing plastic, subject to public consultation which will be launched in due course.

7. The government will support Water UK's communications campaign to 'Bin the Wipe'; and will write to the relevant producers and advertising authorities regarding the labelling of wet wipes as 'flushable'.

## 11. Food and drink

**Our aim:** Reduce food and drink waste in the home and across the supply chain, saving money and resources for businesses and consumers.

Food wasted through incorrect storage, insufficient knowledge or for other reasons is also a waste of all the efforts and resources put into its production – the water used to grow it, the emissions from its transport and the money used to buy it. Especially against a background of a cost of living crisis, it's critical that we make the best use of all the food we produce – if we can seize the opportunity to minimise waste throughout the supply chain and in the home, it will save consumers and businesses money and resources as well as protect our environment.

A [report from the Waste and Resources Action Programme \(https://wrap.org.uk/resources/report/food-surplus-and-waste-uk-key-facts#download-file\)](https://wrap.org.uk/resources/report/food-surplus-and-waste-uk-key-facts#download-file) estimates 9.5 million tonnes of food and drink, after the farm gate, are

wasted annually in the UK. This is worth around £19 billion, and it is estimated that around 70% of this is avoidable. Food waste occurring in households make up 70% of total UK food waste equating to 6.6 million tonnes while families could save themselves £60 per month using the food that could have been eaten but gets thrown away.

We have made substantial progress in reducing food waste in the UK. The [report from the Waste and Resources Action Programme](https://wrap.org.uk/resources/report/food-surplus-and-waste-uk-key-facts#download-file) (https://wrap.org.uk/resources/report/food-surplus-and-waste-uk-key-facts#download-file) estimates, between 2007 and 2018, there was a 21% reduction in food waste per capita. The [report from the Waste and Resources Action Programme](https://wrap.org.uk/resources/report/food-surplus-and-waste-uk-key-facts#download-file) (https://wrap.org.uk/resources/report/food-surplus-and-waste-uk-key-facts#download-file) estimates, between 2007 and 2018, there was a 21% reduction in food waste per capita.

As of September 2022, [the Waste and Resources Action Programme report](https://wrap.org.uk/resources/report/food-waste-reduction-roadmap-progress-report-2022#:~:text=This%20report%20summarises%20the%20key%20achievements%20and%20impact,other%29%2C%20an%20increase%20of%2010%25%20since%20last%20year) (https://wrap.org.uk/resources/report/food-waste-reduction-roadmap-progress-report-2022#:~:text=This%20report%20summarises%20the%20key%20achievements%20and%20impact,other%29%2C%20an%20increase%20of%2010%25%20since%20last%20year) that 300 businesses and 51 supporting organisations had signed up to the [Food Waste Reduction Roadmap](https://wrap.org.uk/taking-action/food-drink/initiatives/food-waste-reduction-roadmap) (https://wrap.org.uk/taking-action/food-drink/initiatives/food-waste-reduction-roadmap). For retailers that provided comparable tonnage data for 2018 and 2021, there has been a reduction in food waste by over 19,000 tonnes (8%), equivalent to almost £62 million of food that did not end up as waste. For producers and manufacturers that provided comparable multi-year data, there has been a reduction overall in their edible food waste by 13,900 tonnes, or 1.4%, compared to their individual baselines (which range from 2015 to 2020).

[Figures from 2022 show that food surplus redistribution](https://wrap.org.uk/resources/report/surplus-food-redistribution-uk-2015-2021) (https://wrap.org.uk/resources/report/surplus-food-redistribution-uk-2015-2021) has trebled between 2015 and 2021 with a cumulative total of 426,000 tonnes being redistributed over 6 years, equivalent to more than a billion meals. The biggest increase has been through charitable redistribution, with 6 times more food redistributed between 2015 and 2021.

Since the last Waste Prevention Programme was published in 2013, we found in the [2020 review](https://wrap.org.uk/resources/report/review-waste-prevention-programme-england-2013-summary-report) (https://wrap.org.uk/resources/report/review-waste-prevention-programme-england-2013-summary-report) that food, along with packaging, has accounted for most of the waste that has been prevented in the review period.

But there is no room for complacency as there are significant challenges remaining. The UK is committed to Sustainable Development Goal 12.3. In order to achieve this target of reducing retail and consumer food waste by 50% by 2030, based on a 2007 baseline, a [Waste and Resources Action Programme report](https://wrap.org.uk/taking-action/food-drink/actions/action-on-food-waste) (https://wrap.org.uk/taking-action/food-drink/actions/action-on-food-waste) states at least another 1.8 million tonnes of food waste will need to be prevented annually by 2030 compared to 2018: around 1.3 million tonnes from reducing household food waste, over 90,000 tonnes from retail, around 250,000 tonnes

from manufacturing and almost 200,000 tonnes from hospitality and food services. We also need to continue to tackle food waste in primary production.

## What has the government done to date?

The government has supported change through a series of voluntary agreements with food businesses and consumer campaigns since 2007, managed by the Waste and Resources Action Programme. The latest of these, the Courtauld Commitment 2030, brings together organisations across the supply chain to reduce food waste to approach the targets in Sustainable Development Goal 12.3. This includes action to push food waste up the Food and Drink Surplus and Waste Hierarchy and ensure that food surplus suitable for human consumption is redistributed. In terms of food waste prevention, Courtauld 2030 sets a target of a 50% per capita reduction in food waste between 2007 and 2030 in line with Sustainable Development Goal 12.3. Several working groups have been set up under the Courtauld banner to address this.

The government made a £15 million pilot fund available for 2019 to 2020 to support the redistribution of surplus food and reduce waste. The [Resource Action Fund](https://wrap.org.uk/what-we-do/our-services/grants-and-investments/resource-action-fund) delivered by the Waste and Resources Action Programme included a programme of grants to provide small- and large-scale capital infrastructure and revenue support to organisations redistributing surplus food from the likes of retailers and food manufacturers.

The Waste and Resources Action Programme in their [food waste in primary production in the UK](https://wrap.org.uk/resources/report/food-waste-primary-production-uk#:~:text=An%20estimate%20for%20food%20surplus%20and%20food%20waste,of%20Oacquiring%20more%20evidence%20and%20taking%20targeted%20action.) report have estimated that £1.2 billion worth of food waste arises in UK primary production each year. Conversations with industry have suggested that a principal cause of food waste on farm is unfair business practices at the point of first sale, where unreasonably late cancellations or late specification changes can lead to produce being left unharvested or rotting in the field. The government is working with the Waste and Resources Action Programme to address issues across the supply chain. Defra have launched a review into supply chain fairness (in pigs, dairy, eggs and horticulture) to address some of these practices.

In 2021, government established the [Hospitality Sector Council](https://www.gov.uk/government/groups/hospitality-sector-council) which was set up to co-create ideas and solutions with the hospitality sector to support the delivery of the [Hospitality Strategy](https://www.gov.uk/government/publications/hospitality-strategy-reopening-recovery-resilience). This includes working with the Council to

repurpose, reuse and divert food waste; support the sector to minimise use of single use items and packaging; and promoting and supporting innovative wetland systems for breweries to reduce water waste.

In the supply chain, more businesses from farm to retail, hospitality and food services need to be targeting, measuring and acting on food waste. The Institute of Grocery Distribution and the Waste and Resources Action Programme collaborated with Courtauld signatories to develop the Food Waste Reduction Roadmap. It showcases actions that large businesses should take to address food waste in their own operations, support their suppliers in taking action, engage with consumers and innovate to reduce their food waste. By the end of its fourth year, 300 of the largest UK food businesses across the supply chain had committed to the Roadmap. Of these, 221 provided evidence of measuring and acting on food waste. The ambition is to have all 600 large food businesses doing so by 2026.

To increase surplus food redistribution, and therefore prevent food waste, relationships between businesses and redistributors have been built and tools, guidance and funding for infrastructure (such as vehicles and refrigeration) has been provided to extract and supply more surplus food.

It is important that consumers are motivated and equipped to significantly reduce household food waste by changing their behaviours to prevent food from going to waste. This is a key area and one where we all have a role to play.

## **What the government will do**

In order to deliver on our goals in the Resources and Waste Strategy to cut down food waste, achieve the Sustainable Development Goal 12.3 target, and work towards eliminating food waste to landfill by 2030, we propose to:

1. Provide over £1 million in funding in 2023 to 2024 to support consumer campaigns to help households waste less food. Reducing food waste in the home could help to save the average family with children up to £60 every month.
2. Through the Waste and Resources Action Programme we will tackle food waste through campaigns including [Love Food Hate Waste](https://www.lovefoodhatewaste.com/) (<https://www.lovefoodhatewaste.com/>) and [Food Waste Action Week](https://www.lovefoodhatewaste.com/take-action-save-food/food-waste-action-week) (<https://www.lovefoodhatewaste.com/take-action-save-food/food-waste-action-week>), which support consumers to reduce food waste in their home, saving people money and bringing environmental benefits. For instance the “Unpacking the Opportunity” programme aims to increase the availability of loose fruit and vegetables in shops, saving plastic, waste and enabling people to buy what they need rather than in bulk, helping shoppers manage their budgets.

3. Promote collaboration and cooperation across the supply chain from retailers to manufacturers to the hospitality sector, between public, private and civil society actors through the support of the Courtauld 2030 Commitment and its programmes to reduce food waste. These include supporting the Food Waste Reduction Roadmap and the key tool to Target, Measure and Act on waste as well as specific working groups to promote change and inform policy.

4. Following on from consultation in summer 2022, consider options to improve voluntary food waste reporting by large food businesses in England. By increasing the number of businesses measuring and publicly reporting their food waste, we expect to drive action to reduce it. As outlined in our [government response to the consultation](https://www.gov.uk/government/consultations/improved-food-waste-reporting-by-large-food-businesses-in-england) (<https://www.gov.uk/government/consultations/improved-food-waste-reporting-by-large-food-businesses-in-england>) which was published in July 2023.

5. Consistent recycling collections for households will come in after the implementation of the extended producer responsibility scheme. More details on this will be set out in due course.

6. Continue to work with the hospitality industry including through the Hospitality Sector Council on co-creating ideas and solutions to tackling waste and the Guardians of Grub campaign which is aimed at raising the profile of food waste prevention in the hospitality industry supporting the reduction of food waste in the preparation and serving of food.

## 12. Measuring, monitoring and evaluating progress

**Our aim:** monitor and evaluate our progress in preventing waste, not only to understand the benefits the current programme is bringing to the economy, society, and the natural world, including reducing carbon emissions, but also to help us develop ambitious, impactful, evidence-based programmes for the future.

We have indicators in place to capture the extent to which these desired changes are happening, and we intend to develop them further. We are also commissioning evaluation to provide independent evidence of our impact.

Our approach reflects our obligations under the [Waste \(England and Wales\) Regulations 2011](https://www.legislation.gov.uk/ukxi/2011/988/contents/made) (<https://www.legislation.gov.uk/ukxi/2011/988/contents/made>) Part 2. To provide trend data over an extended period, we will continue to report against the measures from the last Waste Prevention Programme namely the macro-level metrics proposed for monitoring implementation of Maximising Resources, Minimising Waste. This will be integrated into wider resources and waste reporting. The metrics are:

1. Total waste arisings, including by sector (household, commercial and industrial, construction, demolition and excavation, and other) and on a per capita basis.
2. Total hazardous waste arisings, including by sector and per unit of Gross Value Added.
3. Waste arisings per unit of economic output, nationally and for the commerce, industry and construction sectors.
4. The numbers of enterprises, employment levels and Gross Value Added in the repair, reuse and leasing sectors. Capturing adequate existing data on these measures is likely to be very difficult, particularly for leasing and reuse, so it is likely to be necessary to commission new research in order to quantify these sectors of the economy.
5. Raw material consumption, including per unit of Gross Value Added and per capita.
6. Carbon footprint on a consumption basis, including per capita.
7. Greenhouse gas emissions associated with the management of waste – including landfill and Energy from Waste.

Through the new National Interdisciplinary Circular Economy Research (NICER) programme, set up under the Strategic Priorities Fund, developed to match academic research to government strategic need, experts will support Defra in exploring the metrics and data requirements needed to support a circular economy.

## **Glossary**

### **By-products**

An inevitable result of certain types of material processing. In a circular economy, by-products are a feedstock for another production process.

### **Circular economy**

An approach to managing resources which involves products and materials being kept in use for as long as possible, extracting maximum value from them. It means products and materials are reused, repaired, remanufactured, recycled or regenerated whenever possible and appropriate.

## **Defra**

Department for the Environment, Food and Rural Affairs.

## **Embodied carbon**

The CO<sub>2</sub> emitted in the production of the materials that make up a product or building. It is estimated from the energy used to extract and transport raw materials as well as emissions from manufacturing processes.

## **Extended Producer Responsibility (EPR)**

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 or recycled at end of life.

## **Gasification**

Gasification is the partial combustion of a substance in an oxygen-deprived environment at temperatures normally greater than 650°C. Gasification produces a synthetic gas ('syngas'), and a residue (ash) of non-combustible materials. Gasification of waste is considered an energy recovery process under the Waste Hierarchy.

## **Product passports**

Information about a product's key characteristics such as material composition, instructions for disassembly, repair and recovery of components or materials.



Making such information publicly available can improve the environmental performance of products throughout their lifecycle, as well as helping inform purchasing decisions.

## **Pyrolysis**

The thermal degradation of a substance in the absence of oxygen at temperatures normally between 300 to 850°C. Pyrolysis produces a pyrolysis oil, syngas, and a solid residue known as a pyrolysis char. Pyrolysis of waste is considered an energy recovery process under the Waste Hierarchy.

## **Recycling**

Turning products at end of life back into materials which can be reused.

## **Refurbishment**

Modification of an object that is waste or a product to increase or restore its performance and/or functionality or to meet applicable technical standards or regulatory requirements, with the result of making a fully functional product to be used for a similar purpose to the one that it was originally intended.

Source: International Resources Panel (2018) [Redefining Value: the manufacturing revolution](https://www.resourcepanel.org/reports/re-defining-value-manufacturing-revolution) (<https://www.resourcepanel.org/reports/re-defining-value-manufacturing-revolution>)

## **Remanufacture**

An industrial process that takes place within industrial or factory settings, in which cores are restored to original as-new condition and performance or better. The remanufacturing process is in line with specific technical specifications, including engineering, quality, and testing standards, and typically yields fully warranted products.

Source: International Resources Panel (2018) [Redefining Value: the manufacturing revolution](https://www.resourcepanel.org/reports/re-defining-value-manufacturing-revolution) (<https://www.resourcepanel.org/reports/re-defining-value-manufacturing-revolution>)

## **Repair**

Fixing a specified fault in an object that is a waste or a product and/or replacing defective components, in order to make the waste or product a fully functional product to be used for its originally intended purpose.

Source: International Resources Panel (2018) [Redefining Value: the manufacturing revolution \(https://www.resourcepanel.org/reports/re-defining-value-manufacturing-revolution\)](https://www.resourcepanel.org/reports/re-defining-value-manufacturing-revolution)

## **Reuse**

Using a product or material again for its original purpose, without any reprocessing taking place.

## **Resource Efficiency**

The efficiency with which we use material resources in our economy, in terms of both consumption and production.

## **Resource Productivity**

A measure of GDP for each unit of material resources used whether imported or in domestic consumption.

## **Retained European Union Law**

A category of domestic law created at the end of the transition period. It is made up of certain pieces of EU legislation that were incorporated onto the UK statute book. REUL is also made up of certain domestic laws that implemented EU law and were preserved as REUL on the UK statute book.

## **Servitisation**

Where a company retains ownership of their product and sells the product as a service to their customers, while retaining responsibility for the product's maintenance, therefore maximising the useful life of that product.

## **Sustainable Development Goal 12 (SDG 12)**

'Ensuring sustainable consumption and production patterns. [This includes SDG12.3, "By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses."]

Source: UN (Undated) Goal 12 [Ensure sustainable consumption and production patterns \(https://sdgs.un.org/goals/goal12\)](https://sdgs.un.org/goals/goal12)

## **Value Retention Processes (VRP)**

Activities that involve or enable the extension of a product's service life beyond its original expected lifespan. These processes include reuse, repair, refurbishment, and remanufacturing.


## **The Waste and Resources Action Programme (WRAP)**

A climate action NGO, working with governments, companies and citizens globally, to tackle the causes of climate change and give the planet a sustainable future.

Source: WRAP (Undated) [About us, wrap.org.uk \(https://wrap.org.uk/about-us\)](https://wrap.org.uk/about-us)

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