



Department
for Environment
Food & Rural Affairs

Waste Management Plan for England

August 2020



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Contents

Waste Management Plan for England	1
Objectives and scope of the plan	2
The Waste Management Plan and the objectives of The Waste (England and Wales) Regulations 2011	6
Geographic scope of the Plan	7
Devolved Administrations	7
Wastes covered by the Plan	7
Strategic Environmental Assessment (SEA)	8
Waste management in England	9
The waste hierarchy	10
Waste regulation	14
Waste arisings	15
Household waste	16
Commercial and industrial waste	17
Construction, Demolition & Excavation Waste (CDE)	18
Hazardous waste	19
Resources and Waste: imports and exports	20
Waste services	22
Measures to promote high quality recycling	22
Separate collection of bio-waste	24
Arrangements for hazardous waste	25
Arrangements for construction and demolition waste	26
Arrangements for marine waste	27
Business waste	29
Extended producer responsibility including producer responsibility for packaging	30

Measures to combat and prevent all forms of littering and to clean-up all types of litter.	32
Assessment of need for new collection schemes and infrastructure, the closure of waste infrastructure, including an assessment of the investments and other financial means	35
Infrastructure	35
The closure of waste infrastructure	35
Proximity Principle	36
Waste planning	36
Location	37
Need for additional infrastructure	38
Collection infrastructure	40
Technologies for managing residual waste	41
Evaluation of the development of waste streams in the future	42

Waste Management Plan for England

In the [25 Year Environment Plan](#)¹, the Government pledged to leave the environment in a better condition for the next generation.

The [Resources and Waste Strategy](#)² sets out how we will preserve material resources by minimising waste, promoting resource efficiency and moving towards a circular economy in England. It sets out how we will minimise the damage caused to our natural environment by reducing and managing waste safely and carefully, and by tackling waste crime. It combines actions we will take now with firm commitments for the coming years and gives a clear longer-term policy direction in line with our 25 Year Environment Plan. It is our blueprint for eliminating avoidable³ plastic waste over the lifetime of the 25 Year Plan, doubling resource productivity, and eliminating avoidable waste of all kinds by 2050.

This Waste Management Plan for England, “the Plan”, will fulfil the requirements of [the Waste \(England and Wales\) Regulations 2011](#)⁴ for the waste management plan to be reviewed every six years⁵. The Plan, and its associated documents, together with local authorities’ waste local plans and combined with the equivalent plans produced by the devolved administrations in Scotland, Wales and Northern Ireland, and Gibraltar, will also ensure that waste management plans are in place for the whole of the UK and Gibraltar.

While the Resources and Waste Strategy sets out a vision and a number of policies to move to a more circular economy, such as waste prevention through policies to support reuse, repair and remanufacture activities, the Waste Management Plan for England focuses on waste arisings and their management. It is a high level document which is non-site specific. It provides an analysis of the current waste management situation in England and evaluates how the Plan will support implementation of the objectives and provisions of the Waste (England and Wales) Regulations 2011.

National planning policy on waste is currently set out in the [National Planning Policy for Waste](#)⁶. It provides the planning framework to enable local authorities to put forward, through waste local plans, strategies that identify sites, and areas suitable for new or enhanced facilities to meet the waste management needs of their areas. This policy will be

¹ www.gov.uk/government/publications/25-year-environment-plan

² www.gov.uk/government/publications/resources-and-waste-strategy-for-england

³ We talk about plastic waste being ‘avoidable’ when the plastic could have been reused or recycled; when a reusable or recyclable alternative could have been used instead; or when it could have been composted or biodegraded in the open environment

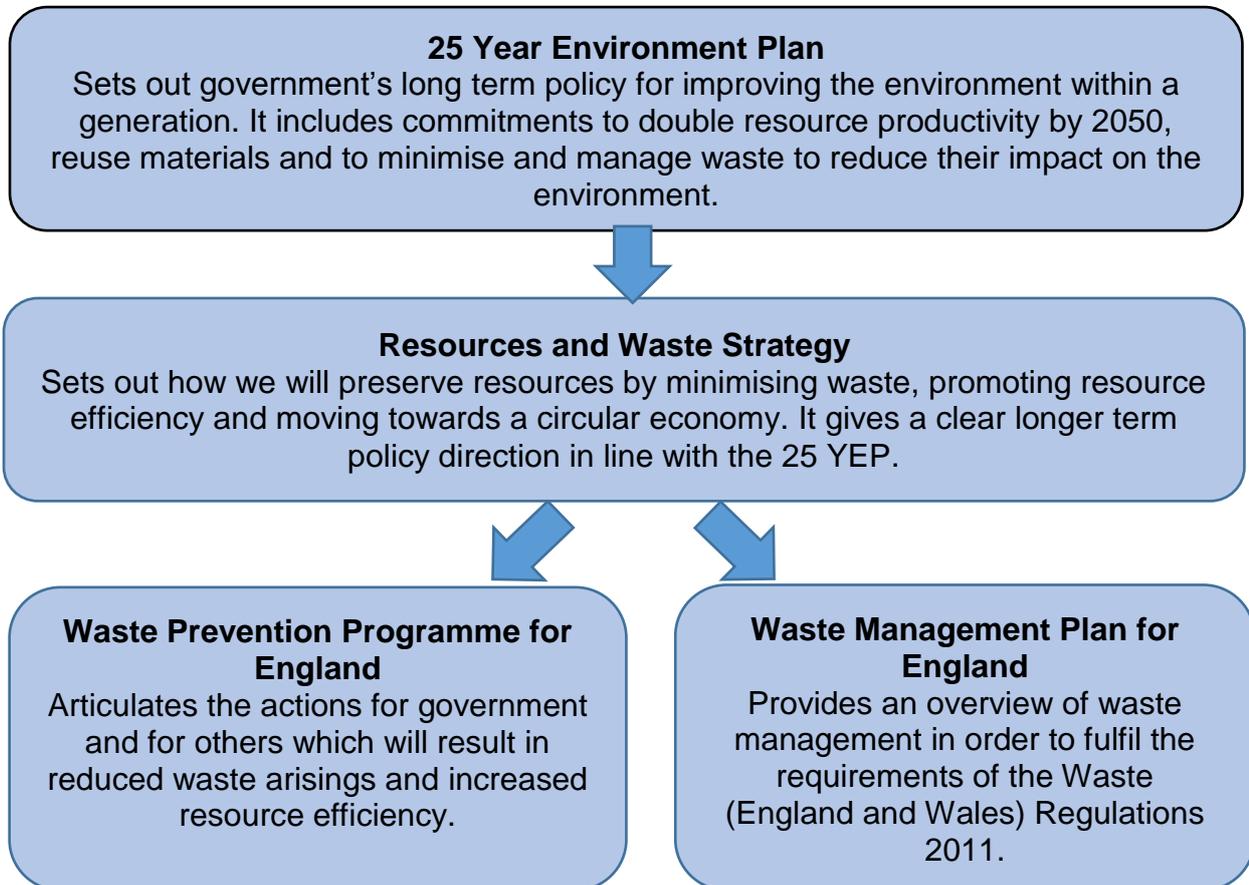
⁴ www.legislation.gov.uk/ukSI/2011/988/regulation/10/made

⁵ The Waste Management Plan for England is subject to review as provided for in regulation 10(1)(a) of the Waste (England and Wales) Regulations 2011.

⁶ www.gov.uk/government/publications/national-planning-policy-for-waste

updated to align with the changes to the National Planning Policy Framework and the Resources and Waste Strategy.

Figure 1 Relationship between the Waste Management Plan for England and other policy documents



Objectives and scope of the plan

This Plan supersedes the previous waste management plan for England⁷. It provides an overview of waste management in England. The plan includes changes which will be made by transposition of the Circular Economy Package⁸ where these could be incorporated in the Plan.

The Waste (England and Wales) Regulations 2011 specify that the Plan for England must contain the following information. The changes to these requirements to be made by the transposition of the Circular Economy Package are indicated by italics:

⁷ The Waste Management Plan for England 2013. www.gov.uk/government/publications/waste-management-plan-for-england

⁸ [Directive \(EU\) 2018/851 of 30 May 2018 amending Directive 2008/98/EC on waste](#) (Non-mandatory changes are indicated by text in italics)

- An analysis of the current waste management situation in the geographical entity concerned, as well as the measures to be taken to improve environmentally sound preparing for re-use, recycling, recovery and disposal of waste, and an evaluation of how the plan will support the implementation of the objectives and provisions listed in the Waste (England and Wales) Regulations 2011;
- The type, quantity and source of waste generated within the territory, the waste likely to be shipped from or to the national territory, and an evaluation of the development of waste streams in the future;
- Existing major disposal and recovery installations, including any special arrangements for waste oils, hazardous waste, *waste containing significant amounts of critical raw materials*, or waste streams addressed by specific legislation;
- An assessment of the need for the closure of existing waste installations and for additional waste installation infrastructure in accordance with the proximity principle. *An assessment of the investments and other financial means, including for local authorities, required to meet those needs is carried out;*
- *Information on the measures to attain the objective of diverting waste suitable for recycling or other recovery (in particular municipal waste) away from landfill or in other strategic documents;*
- An assessment of existing waste collection schemes, *including the material and territorial coverage of separate collection and measures to improve its operation, of any exceptions to requirements to collect waste separately*, and of the need for new collection schemes;
- Sufficient information on the location criteria for site identification and on the capacity of future disposal or major recovery installations, if necessary;
- General waste management policies, including planned waste management technologies and methods, or policies for waste posing specific management problems;
- *Measures to combat and prevent all forms of littering and to clean up all types of litter;*
- *Appropriate qualitative or quantitative indicators and targets, including on the quantity of generated waste and its treatment and on municipal waste that is disposed of or subject to energy recovery;*
- Waste management plans must:
 - *include the measures to be taken so that, by 2035:*

- *the preparing for re-use and the recycling of municipal waste is increased to a minimum of 65 % by weight.*
 - *the amount of municipal waste landfilled is reduced to 10% or less of the total amount of municipal waste generated (by weight).*
- Conform to the strategy for the reduction of biodegradable waste going to landfill required by section 17(1) of the Waste and Emissions Trading Act 2003
- *Conform to the provisions in paragraph 5(1)(b) of Schedule 10 to the Environmental Permitting (England and Wales) Regulations 2016*
- *For the purposes of litter prevention, conform to:*
 - *the programme of measures published pursuant to regulation 14(1) of the Marine Strategy Regulations 2010;*
 - *each programme of measures proposed and approved under regulation 12(1) of the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 for river basin districts that are wholly or partly in England.*

Schedule 1 to the Waste (England and Wales) Regulations 2011 also sets out other obligations for the Plan which include:

- Having a specific chapter on the management of packaging and packaging waste, including measures taken
 - to prevent the formation of packaging waste in accordance with the Packaging (Essential Requirements) Regulations 2015;
 - that consist of national programmes and projects to introduce producer responsibility to minimise the environmental impact of packaging;
 - that achieve a sustained reduction in the consumption of lightweight plastic carrier bags;
 - that actively encourage public information and awareness campaigns concerning the adverse environmental impact of the excessive consumption of lightweight plastic carrier bags;
 - that encourage reuse systems of packaging, which can be reused in an environmentally sound manner

- *that encourage the increase in the share of re-useable packaging placed on the market and of systems to reuse packaging in an environmentally sound manner without compromising food hygiene or the safety of consumers*
- Measures to promote high quality recycling including the setting up of separate collections of waste where technically, environmentally and economically practicable and appropriate to meet the necessary quality standards for the relevant recycling sectors.
- As appropriate, measures to encourage the separate collection of bio-waste with a view to the composting and digestion of bio-waste.
- As appropriate, measures to be taken to promote the re-use of products and preparing for re-use activities, in particular—
 - (a) measures to encourage the establishment and support of re-use and repair networks;
 - (b) the use of economic instruments;
 - (c) the use of procurement criteria; and
 - (d) the setting of quantitative objectives.
- Measures to be taken to ensure that by 2020:
 - (a) at least 50% by weight of waste from households is prepared for re-use or recycled.
 - (b) at least 70% by weight of non-hazardous construction and demolition waste that is not naturally occurring material falling within the description of code 17 05 04 in the List of Wastes⁹ is subjected to material recovery.

⁹ This is construction and demolition waste excluding hazardous waste and naturally occurring material falling within code 17 05 04 in EU Decision 2005/532.

The Waste Management Plan and the objectives of the Waste (England and Wales) Regulations 2011

There are comprehensive waste management policies in England which taken together deliver the objectives of the The Waste (England and Wales) Regulations 2011: to protect the environment and human health by preventing or reducing the generation of waste, the adverse impacts of the generation and management of waste, and by reducing overall impacts of resource use and improving the efficiency of such use¹⁰. It is not, therefore, the intention of the Plan to introduce new policies or to change the landscape of how waste is managed in England. Its core aim is to bring current waste management policies under the umbrella of one national plan.

The Resources and Waste Strategy sets out a vision and a number of policies to move to a more circular economy, many of which fall under the Waste Management Plan for England umbrella. In addition, the following documents contain significant policies that contribute to the Waste Management Plan for England:

- the Clean Growth Strategy¹¹,
- the Industrial Strategy¹²,
- the Litter Strategy¹³
- the UK Plan for Shipments of Wastes¹⁴;
- the National Policy Statements for Hazardous Waste¹⁵ and for Renewable Energy Infrastructure¹⁶ (in so far as it relates to facilities which recover energy from waste).

In preparing the Plan we have also drawn on a number of other sources which are referenced in this document.

National waste planning policy is an important part of delivering the objectives of the Waste (England and Wales) Regulations 2011. Current planning policy in the National Planning Policy Framework¹⁷ and the National Planning Policy for Waste contains planning policies which should be taken into account by local authorities:

- in assessing the suitability of areas and sites for waste development within local plans

¹⁰ This objective includes changes to the text to be made by transposition of the Circular Economy Package

¹¹ www.gov.uk/government/publications/clean-growth-strategy

¹² www.gov.uk/government/publications/industrial-strategy-building-a-britain-fit-for-the-future

¹³ www.gov.uk/government/publications/litter-strategy-for-england

¹⁴ www.gov.uk/government/publications/uk-plan-for-shipments-of-waste

¹⁵ www.gov.uk/government/publications/hazardous-waste-national-policy-statement

¹⁶ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47856/1940-nps-renewable-energy-en3.pdf

¹⁷ www.gov.uk/government/publications/national-planning-policy-framework--2

- in determining planning applications.

Within the Plan, the chapter on the waste management situation in England summarises how we apply the waste hierarchy in England. This chapter also explains how waste management is regulated by the Environment Agency to prevent harm to human health and the environment.

The chapter on waste arisings summarises information on the extent, nature, and sources of waste which is necessary to underpin decisions on waste management. Subsequent chapters provide further detail on actions to deliver the objectives of the Waste (England and Wales) Regulations 2011 by promoting better quality recycling and, where required, new collections and infrastructure. Finally, the Plan considers the future development of waste streams in the light of current policies.

The Plan – like the Resources and Waste Strategy - recognises that the objectives of The Waste (England and Wales) Regulations 2011 cannot be delivered by government alone. It requires action by businesses, consumers, householders and local authorities. The policies summarised in the Strategy and the Plan provide a framework for action by such groups.

At the local authority level, waste planning authorities (county and unitary authorities in England) are responsible for producing waste local plans that cover the land use planning aspect of waste management for their areas. Waste planning authorities should have regard to this Plan - alongside the National Planning Policy on Waste and other planning policy contained in the National Planning Policy Framework, in drawing up, or revising, their existing waste local plans.

Geographic scope of the Plan

This plan covers England as well as the sea adjacent to England as far as the seaward boundary of the territorial sea.

Devolved administrations

As waste is a devolved matter, devolved administrations and Gibraltar are responsible for producing a plan for their areas. Together with the Waste Management Plan for England those plans will collectively cover the geographical territory of the United Kingdom.

Wastes covered by the Plan

The legal definition of waste is set out in various pieces of legislation relating to waste, including section 75(2) of the Environmental Protection Act 1990. It is defined as “any substance or object which the holder discards or intends or is required to discard”.

Within this definition, waste streams are employed to categorise particular types of waste which may be produced by individuals or organisations. Primarily these are:

1. Household waste and commercial waste of a nature similar to household waste
2. Industrial (including agricultural) and other commercial waste
3. Industrial waste - construction and demolition waste
4. Hazardous waste

The Plan does not apply to certain wastes covered by other legislation, such as radioactive waste, mining waste, animal by-products and waste waters.

Strategic environmental assessment (SEA)

What is SEA?

The Environmental Assessment of Plans and Programmes Regulations 2004¹⁸ introduced a requirement for a SEA to be carried out for a number of statutory plans and programmes, including waste management plans.

The SEA process aims to identify the main environmental implications of a plan, and key alternatives, before it is adopted and its provisions are implemented. This allows the environmental impacts of proposals to be identified and addressed whilst at the development stage, enabling consideration of possible alternatives in advance of implementation. SEA therefore facilitates the development of plans that take account of the environmental impacts (positive and negative), allowing full consideration of them, and identifying options for mitigation of impacts where they have the potential to arise.

The Environmental Report accompanying the Plan appraises the significant environmental impacts of the waste management plan.

Environmental report summary

In the context of the Environmental Report, 'the Plan' refers to the Waste Management Plan for England excluding the National Planning Policy on Waste, which has been subject to separate consideration under the 2004 Environmental Assessment of Plans and Programmes Regulations.

¹⁸ SI 2004/1633

Given that the Plan under assessment here does not include the spatial distribution of facilities and other issues which are the realm of national waste planning policy, there can be no location-specific impacts of the Plan.

The Plan is designed to bring together current plans and policies already in place. Overall through the policies contained in the Plan the assessment found that the Plan will have positive effects on the environment. This broadly reflects the socio-economic and environmental benefits associated with sustainable waste management and moving waste up the hierarchy. Significant positive effects were identified in respect of biodiversity, land use, geology and soils and on climatic factors. No overall significant negative effects were identified. The report identified that new waste management infrastructure and the implementation of new waste collection services and deposit return schemes (principally emissions to air and disturbance associated with increased vehicle movements), could have a minor negative effect on biodiversity. The report recognised that further assessments will be carried out through the planning and permitting regimes.

Further detail can be found in the Post-Adoption Statement which will become available post-consultation.

Waste management in England

Our 25 Year Environment Plan committed us to being the first generation to leave the environment in a better state than we found it. Our Resources and Waste Strategy will help us meet that commitment. It sets out measures to eliminate avoidable plastic waste, tackle confusion over household recycling, and make sure that those responsible for creating polluting products pay for the costs of that pollution. Further information can be found in the Resources and Waste Strategy.

We want to prolong the lives of the materials and goods that we use. Our plan is to move society away from the inefficient 'linear' economic model of 'take, make, use, throw'. A more circular economy will see us keeping resources in use for as long as possible. It will allow us to extract maximum value from them, then recover and regenerate products and materials at the end of their lifespan.

The Resources and Waste Strategy identifies five strategic ambitions:

- To work towards all plastic packaging placed on the market being recyclable, reusable or compostable by 2025;
- To work towards eliminating food waste to landfill by 2030;

- To eliminate avoidable¹⁹ plastic waste over the lifetime of the 25 Year Environment Plan;
- To double resource productivity²⁰ by 2050; and
- To eliminate avoidable waste of all kinds by 2050.

Waste management is defined by virtue of regulation 3(2) of the Waste (England and Wales) Regulations 2011 as “the collection, transport, recovery (including sorting), and disposal of waste, including the supervision of such operations and the after-care of disposal sites, and including actions taken as a dealer or broker”. The way waste is managed in England (and the UK) is continually evolving as we move away from landfilling the majority of our waste to a more circular economy where we recover and regenerate products and materials whenever we can.

At the turn of the century, the majority of waste produced in the UK was being landfilled at a minimal (financial) cost and recycling was in its relative infancy. For example, only 12% of all local authority managed waste was recycled or composted in England in 2000/01, compared to 42.7% in 2018/19²¹. Meanwhile, the proportion of local authority waste sent to landfill has fallen from 79.0% to 10.8% over the same period.

Positive shifts such as these have been driven by a combination of regulatory, policy and financial measures such as recycling targets, landfill tax, and targeted financial support. However, there is more to be done, with progress in some areas, for example improvements to recycling rates, having slowed in recent years.

The waste hierarchy

In England, the waste hierarchy is both a guide to sustainable waste management and a legal requirement, enshrined in law through the Waste (England and Wales) Regulations 2011.

The waste hierarchy, which ranks options for waste management, has driven some progress towards better use of our resources. Priority goes to preventing the creation of waste in the first place, followed by preparing waste for reuse; to recycling, and then recovery. Disposal – in landfill for example – is regarded as the worst option. To date we have increased our rates of recovery and recycling and generated much more energy from waste. We want to shift away from waste towards resource efficiency, and will do this by

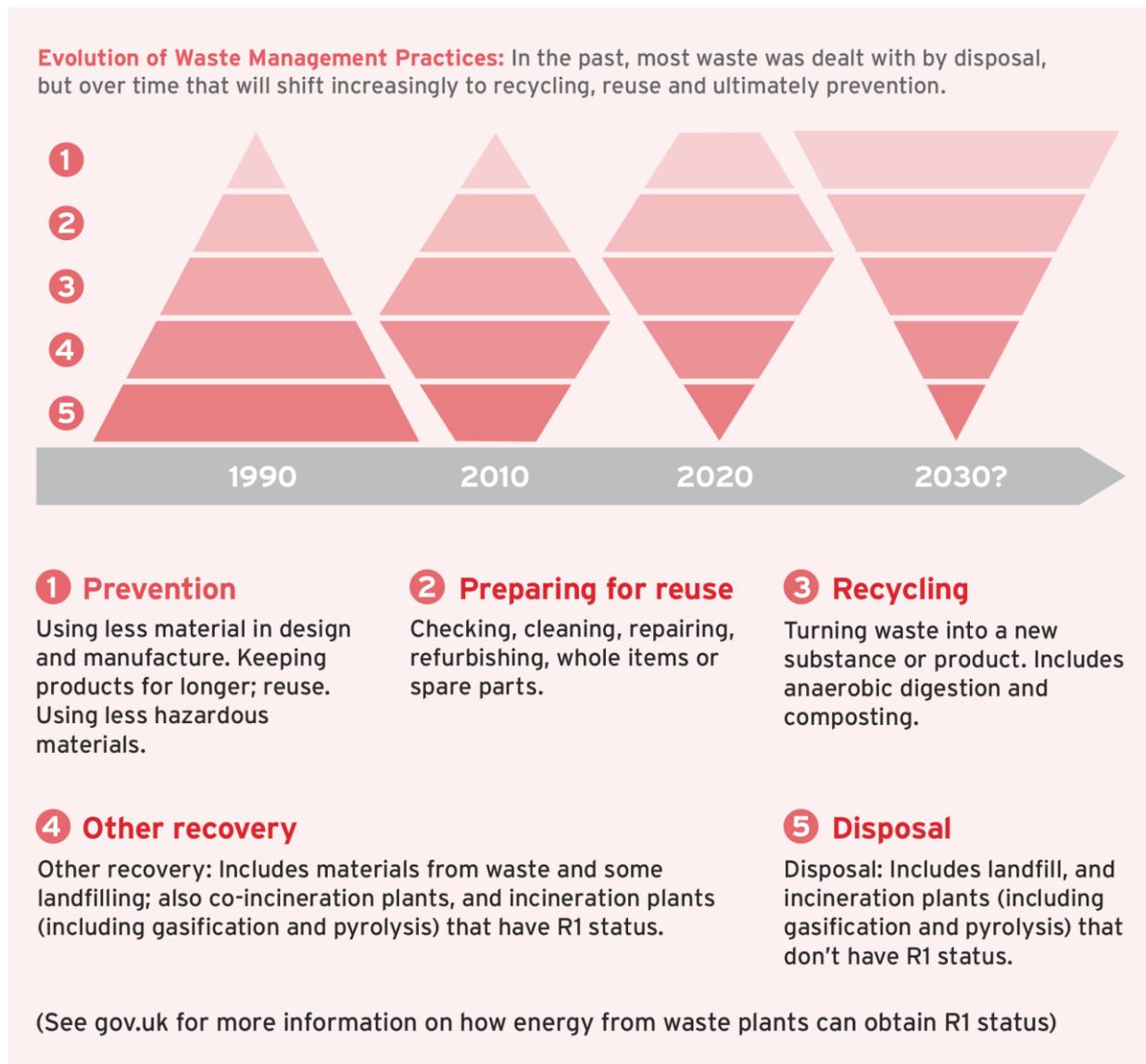
¹⁹ We talk about plastic waste being ‘avoidable’ when the plastic could have been reused or recycled; when a reusable or recyclable alternative could have been used instead; or when it could have been composted or biodegraded in the open environment.

²⁰ Resource productivity is a measure of the value (in terms of GDP) we generate per unit of raw materials we use in the economy.

²¹ <https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables>

focusing not just on managing waste, but on managing the resources which become waste.

Figure 2 Evolution of waste management practices



The 2011 Regulations require everyone involved in waste management and waste producers in England (and Wales) to take, on the transfer of waste, all reasonable measures to apply the waste hierarchy except where, for specific waste streams, departing from the hierarchy is justified by lifecycle thinking on the overall effects of generating and managing the waste. Regulators under the Environmental Permitting (England and Wales) Regulations 2016²² must exercise their relevant functions (such as granting environmental permits) for the purpose of ensuring that the waste hierarchy is applied to the generation of waste by a waste operation. To aid people to apply the waste hierarchy, Defra produced

²² SI 2016/1154

guidance on its application²³. We have also published guidance on applying the waste hierarchy to hazardous waste²⁴ and a food and waste hierarchy²⁵ which sets out our intentions to stop surplus food from becoming waste.

Prevention

The Resource and Waste Strategy sets out our ambitions for maximising the value of resources and minimising the waste we create by moving towards a circular economy. It sets out how reusing products preserves the energy and materials embedded in them during their production and how adopting a 'lifecycle' approach requires us to focus not just on managing waste responsibly, but on preventing its creation in the first place. The Resources and Waste Strategy places a stronger emphasis on sustainable production, emphasising that we need to rethink how we design and make products in order to be more efficient in the way we use our stock of natural resources.

The [Waste Prevention Programme for England 2013](#)²⁶ set out the Government's view of the key roles and actions that should be taken to move towards a more resource efficient economy. The Waste Prevention Programme is being reviewed and modified in line with the requirements of the Waste (England and Wales) Regulations 2011. It will reflect the initiatives being taken forward in the Resources and Waste Strategy, as well as the measures to prevent waste generation required by the Waste (England and Wales) Regulations 2011.

Preparing for re-use

The Resource and Waste Strategy sets out our proposals for encouraging the reuse of products and ensuring that the purchase of sustainable goods and reusing them becomes embedded into our way of life. It includes proposals and actions to make it easier for people and organisations to buy products that are better designed to be re-usable or upgradable – that have longer lives and lower environmental impacts. It is intended to elaborate on these proposals and actions under the revised Waste Prevention Programme.

Recycling

The Resources and Waste Strategy sets out our plans to drive better quantity and quality in recycling and to make it easier for households, businesses, and local authorities to

²³ <https://www.gov.uk/government/publications/guidance-on-applying-the-waste-hierarchy>

²⁴ <https://www.gov.uk/government/publications/guidance-on-applying-the-waste-hierarchy-to-hazardous-waste>

²⁵ <https://www.gov.uk/government/publications/food-and-drink-waste-hierarchy-deal-with-surplus-and-waste/food-and-drink-waste-hierarchy-deal-with-surplus-and-waste>

²⁶ <https://www.gov.uk/government/publications/waste-prevention-programme-for-england>

recycle. The most recent statistics²⁷ show that the official England waste from households recycling rate was 44.7% for 2018. This includes metals recovered from incineration of residual waste which are then recycled. The Government keeps progress towards the targets under review by monitoring actual recycling rates and by modelling future recycling. Many local authorities continue to expand services such as food waste collection, but others have seen reductions in their recycling rate. Overall the rate of increase has slowed in the last 5 years. We will continue to work with local authorities to increase household recycling.

For various reasons, including uncertainty about quality, lack of information and high costs when collections are inconsistent, the benefits of reusing products for example after remanufacture or reconditioning are not fully realised at present. Leaving the EU provides us with an opportunity to review and streamline the regulatory environment to overcome these barriers.

Our latest best estimates for non-household municipal recycling, which concerns recycling of materials similar in nature to household waste, put the recycling rate at between 34% and 40%.

We are continuing to comfortably exceed the target to recover 70% of non-hazardous construction and demolition waste by 2020. The annual recovery rate for construction and demolition in England has remained at around 92% since 2010. In 2016, the recovery rate was 92.1%.

This Plan sets out a number of other initiatives that are under way to boost recycling.

Other recovery

The Government continues to support anaerobic digestion (AD) as the most effective way to treat separately collected food waste to produce energy and valuable bio-fertiliser. This ensures that food waste is diverted from landfill and reduces greenhouse gas emissions. The Government is committed to increasing the energy from waste produced through AD and in February 2019 published a consultation on measures to increase recycling, including measures to increase the amount of separately collected food waste from households and businesses. These measures would support further growth in AD.

The Government supports efficient energy recovery from residual waste – energy from waste is generally the best management option for waste that cannot be reused or recycled in terms of environmental impact and getting value from the waste as a resource. It plays an important role in diverting waste from landfill. In 2016, 6.2 million tonnes were disposed of in energy from waste facilities. The Resources and Waste Strategy promotes the greater efficiency of energy from waste plants through utilisation of the heat generated

²⁷ <https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs/series/waste-and-recycling-statistics>

in district heating networks or by industry, and by seeking an increase in the number of plants obtaining R1 recovery status²⁸. The Guide to Energy from Waste highlights key environmental, technical and economic issues to raise the level of understanding and debate around energy from waste²⁹.

It is for the Environment Agency to determine on a case-by-case basis whether an application for an environmental permit constitutes a waste recovery or a disposal operation. Inert waste can and should be recovered or recycled whenever possible. However, the disposal of inert waste in or on land, i.e. landfill, remains a valid way of restoring quarries and worn out mineral workings where this is a planning requirement.

Disposal

Landfill or incineration without energy recovery³⁰ should usually be the last resort for waste, particularly biodegradable waste. In addition to the measures outlined in our Resources and Waste Strategy, the landfill tax is one of the key drivers to divert waste from landfill to ensure that we meet our 2020 target of no more than 10.161 million tonnes of biodegradable municipal waste to landfill and our 2035 target of no more than 10% of municipal waste to landfill. That does not mean that all wastes will be diverted from landfill. There are some wastes for which landfill remains the best, or least worst, option. The Resources and Waste Strategy recognised that there is an ongoing role for landfill in managing waste, particularly for inert waste that cannot be prevented, recovered or recycled, but that its use should be minimised as much as possible. Such materials are likely to include:

- some hazardous wastes – such as asbestos;
- certain process residues, such as pre-treated industrial wastes from which no further resources can be recovered; and
- waste for which the alternatives to landfill are not justified on cost or environmental and resource efficiency grounds.

Waste regulation

The regulatory framework for the waste sector exists to protect the environment and human health and to provide a level playing field for a market in which legitimate businesses can operate and invest with confidence. Whilst regulation and its enforcement

²⁸ 'R1' Recovery status acts as a proxy for the energy-generating efficiency of facilities. Facilities, including gasification and pyrolysis plants, which achieve the status are classed as a recovery operation for the purposes of the waste hierarchy and so are a level up from the bottom rung of 'disposal'.

²⁹ <https://www.gov.uk/government/publications/energy-from-waste-a-guide-to-the-debate>

³⁰ Incineration may be classed as recovery or disposal depending on the circumstances. Our Energy from Waste guide provides further analysis of this issue.

must be proportionate, it is important that it is appropriate to the risks and targeted towards those with poor standards of compliance or who cause a nuisance or harm, and those who deliberately flout the law.

The Environment Agency is the main regulator of waste management in England. Among its responsibilities are the determination of applications for environmental permits; the registration of exemptions for low risk waste treatment; the registration of waste carriers, brokers and dealers; and carrying out related inspection and other compliance assessment activities³¹. The Agency also carries out work to prevent, disrupt and prosecute those who attempt to operate illegally outside of the regulatory framework.

The environmental permitting regime is a common framework for applying for, receiving, varying, transferring and surrendering permits, along with compliance, enforcement and appeals arrangements. The regime provides exemptions from environmental permitting for smaller scale, lower risk waste treatment operations. The registration system for waste carriers, brokers and dealers provides a level of assurance that those involved in transporting and dealing in waste, and brokering waste management, are authorised to do so.

The Resources and Waste Strategy sets out our strategic approach to tackling low levels of performance and crime in the waste sector. We continue to ensure that the regulatory framework for the industry is fit for purpose, and work to prevent, detect and deter waste criminals, especially those involved in serious and organised criminality in the sector.

Polluter pays principle

The waste producer and the waste holder should manage waste in a way that guarantees a high level of protection of the environment and human health. In accordance with the polluter-pays principle, the costs of waste management shall be borne by the original waste producer, or by the current or previous waste holders. The distributors of products potentially share these costs. The polluter-pays principle ensures that those responsible for producing and holding waste are incentivised to reduce and/or manage their waste in a way that reduces impacts on the environment and human health.

Waste arisings

Data on total waste arisings are published in the *UK statistics on waste*³² annual release. The most recent year reported is for 2016. In England, total waste generation has risen since 2010, from 168 million tonnes to 187 million tonnes in 2016³³.

³¹ <http://www.legislation.gov.uk/uksi/2016/1154/contents/made>

³² <https://www.gov.uk/government/statistics/uk-waste-data>

³³ <https://www.gov.uk/government/statistical-data-sets/env23-uk-waste-data-and-management>

This publication also provides breakdowns of waste arisings specifically from construction and demolition, commercial and industrial, and household sources, which we examine in their associated sections.

The national electronic duty of care (EDOC) system introduced in 2014 monitors the collection, transportation and disposal of waste materials across the UK. Since introduction over 11,000 companies have registered to use EDOC.

Data on waste collected by local authorities has radically improved through the creation of WasteDataFlow. In the Resources and Waste Strategy we set out our plans to make a similar step change to produce data on resource inputs, stocks and flows, and expand our knowledge of commercial, industrial, construction and demolition wastes.

The Governments and regulators across England, Northern Ireland, Scotland and Wales, are looking at how we can digitise waste tracking processes. In particular, how we record what happens to waste as it moves from production to recovery or disposal³⁴.

Household waste

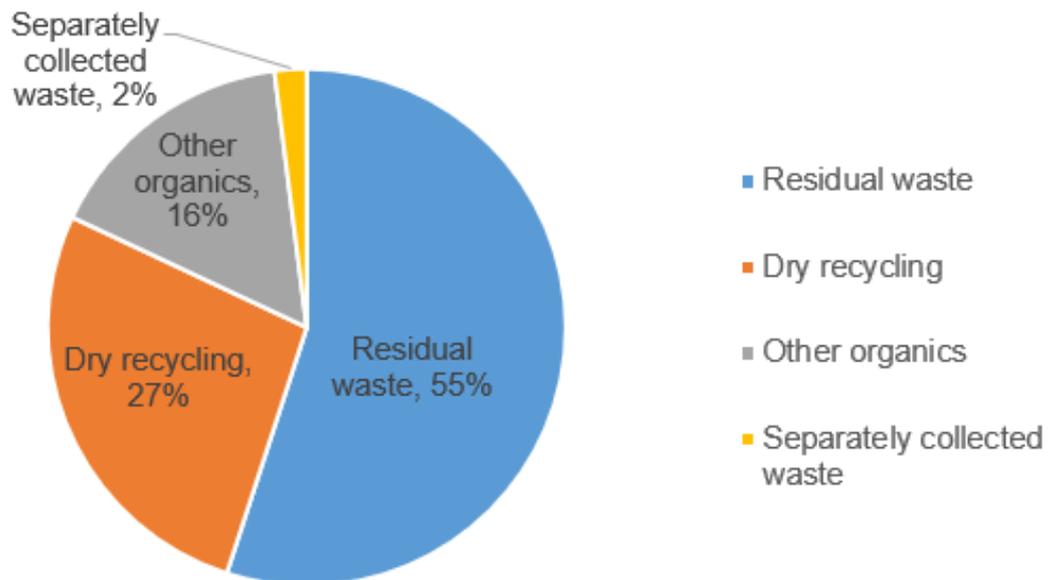
In 2018, 20.0 million tonnes of household waste were generated in England. The composition of this household waste is broken down as: residual waste, 55%; dry recycling, 27%; other organics, 16%; and separately collected food waste, 2% (see Figure 3: Waste composition: Waste stream proportions as a percentage of total 'waste from households', 2014-2018, England³⁵).

In 2018, 44.7% of the household waste generated was recycled, re-used or composted. It equates to 394kg of waste generation per person per year, of which 176kg was recycled, composted or re-used.

³⁴<https://www.gov.uk/government/collections/waste-management-smart-tracking-of-waste-govtech-catalyst>

³⁵[Statistics on waste managed by local authorities in England in 2018/19](#)

Figure 3 Composition of household waste, England, 2018 – proportion of tonnages



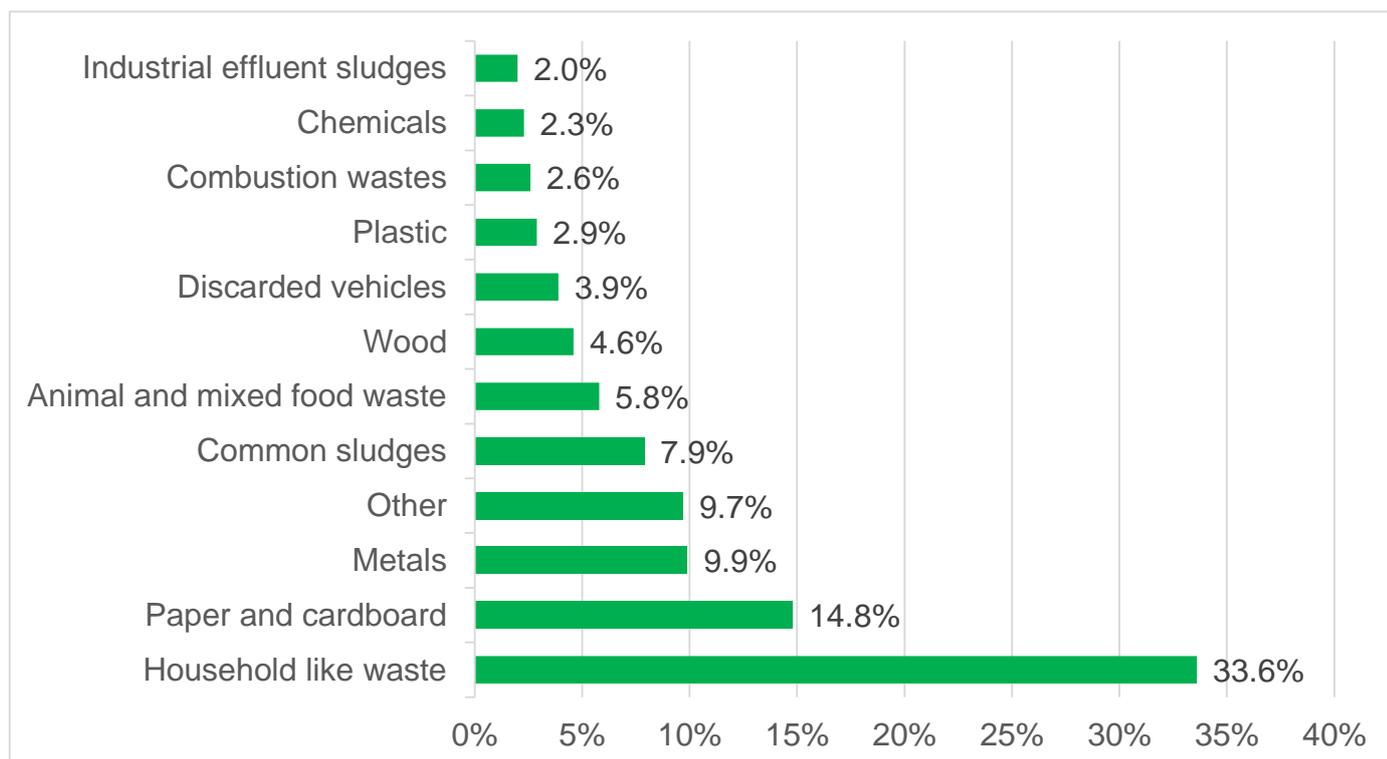
Source: Defra Statistics

Commercial and industrial waste

In 2017, 37.9 million tonnes of waste was generated by businesses³⁶ in England, an increase of 4.8 million tonnes from 33.1 million in 2016. Of this 37.9 million, the industrial sector accounted for 10.8 million tonnes and the commercial sector 27.1 million tonnes. The composition of this waste is shown in Figure 4.

³⁶ : <https://www.gov.uk/government/statistics/uk-waste-data>

Figure 4 Composition of commercial and industrial waste in 2016



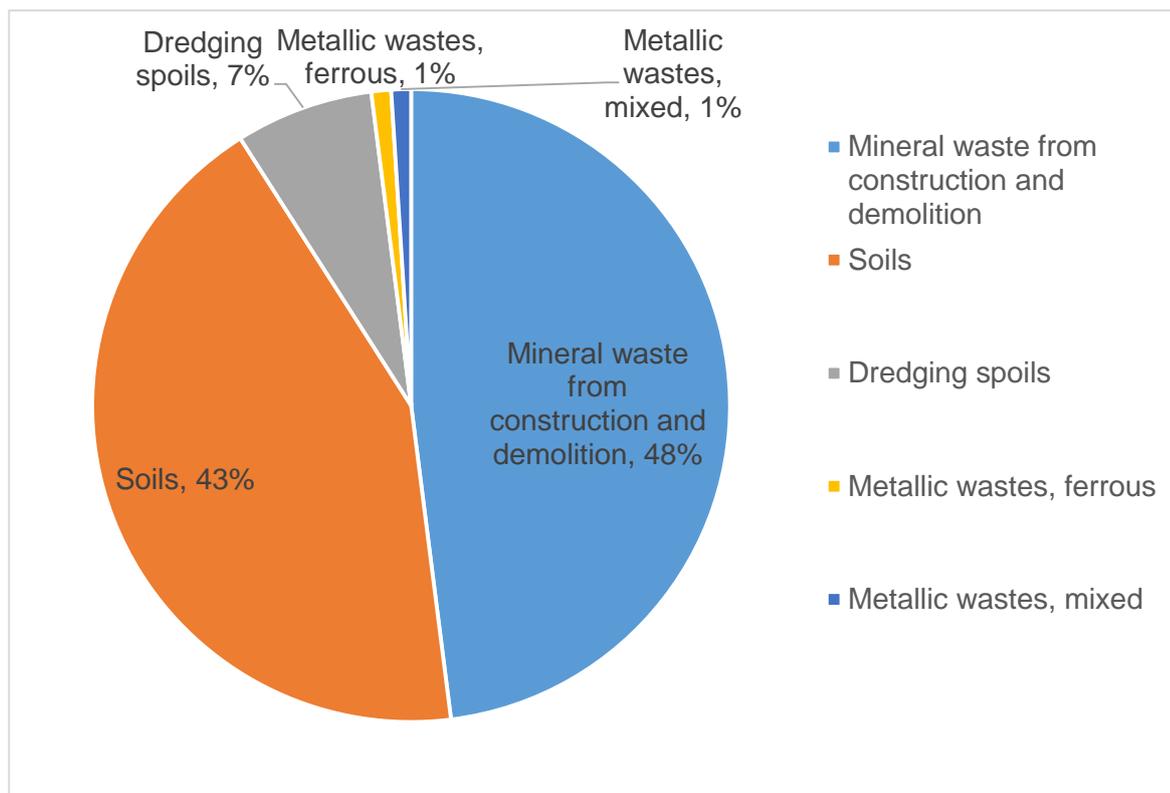
Source: Defra Statistics

Construction, demolition & excavation waste (CDE)

The construction, demolition and excavation sector is the largest contributing sector to the total waste generation. This generated 120.3 million tonnes of waste in 2016, accounting for almost two thirds (64%) of total waste generation³⁷. The composition of this waste can be broken down as follows: mineral waste from construction and demolition, 48%; soils, 43%; dredging spoils, 7%; metallic wastes ferrous, 1%; metallic wastes, mixed, 1%. (See Figure 5: Composition of construction and demolition waste in 2016).

³⁷ UK Statistics on Waste – February 2019 update: <https://www.gov.uk/government/statistics/uk-waste-data> and https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/778622/UK_Statistics_on_Waste_dataset_Feb_2019_rev_FINAL.xlsx

Figure 5 Composition of construction and demolition waste in 2016



Source: Defra Statistics

Note that the mineral wastes in this pie-chart are inert materials from construction and not from mining/extractive activities.

Hazardous waste

The amounts of hazardous waste consigned in England are significant, with around 4.8 million tonnes arising in England in 2010, 4.7 million tonnes in 2012 and 4.3 million tonnes in 2014³⁸. This waste arises from six main sectors of industry: chemicals, oils, construction and demolition, waste and water treatment, and general industry. Government's Strategy for Hazardous Waste Management in England³⁹ sets out important principles that aim to encourage reductions in hazardous waste arisings and the wider application of the waste hierarchy to the management of hazardous waste. Our Resources and Waste Strategy

³⁸https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/710124/Digest_of_Waste_and_Resource_Statistics_2018.pdf

³⁹<https://webarchive.nationalarchives.gov.uk/20130505065433/http://archive.defra.gov.uk/environment/waste/topics/hazwaste/documents/policy.pdf>

also includes a commitment to consult on further ways to encourage hazardous waste producers to implement the waste hierarchy.

Resources and waste: imports and exports

The UK imports around 167 million tonnes of goods and raw materials from abroad each year, including food, electrical items, clothing and a range of other products⁴⁰. This allows the UK to access goods which can be made more cheaply elsewhere or from materials not available in the UK.

In turn, as well as importing and exporting goods, the UK imports nearly 0.9million⁴¹ tonnes of waste materials and exports approximately 16.3 million tonnes of materials for recycling per year. This ensures that much of the recyclable waste collected by local authorities and waste management companies is ultimately recycled.

The materials that the UK exports for recovery include glass, paper, plastic and scrap metal which are all traded on the international market. The largest tonnage of materials exported for recovery is metals, followed by paper and cardboard. Plastics and glass are also exported for recovery in significant volumes. As of 2018, our principal trading partners were the EU and European Free Trade Association (EFTA) countries, as well as countries in Asia. Overall, we export materials to a range of countries, such as Turkey, India, and China (which in 2018 was the main export destination for paper recycling). However, restrictions on waste imports, notably plastic, have changed the markets we export to, with less plastic exported to China, and countries such as Malaysia and Turkey becoming more prominent.

The UK also exports refuse derived fuel (RDF) mainly to northern continental Europe and Scandinavia for energy recovery. RDF is mixed solid waste that has been pre-treated so it consists largely of combustible components such as unrecyclable plastic and biodegradable waste – as much as possible, any recyclable material is removed and sent to be recycled as part of pre-treatment. Exports of RDF have increased significantly in recent years in response to the rising costs of landfill in the UK. Exports of RDF have risen from 961 thousand tonnes in 2012 to 3.2 million tonnes in 2017. Exports of wood/biomass for energy recovery are not included within the RDF data.

Waste shipment controls

There are strict controls on what waste can be exported and to which countries. These controls stem from the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their disposal and an OECD Council Decision on the Control of

⁴⁰ 2017 HMRC trade data, all commodity codes

<https://www.uktradeinfo.com/statistics/BuildYourOwnTables/Pages/Home.aspx>

⁴¹ 2017 HMRC trade data, all waste commodity codes

Transfrontier Movements of Wastes Destined for Recovery Operations. The Convention provides a global system for controlling the export of hazardous wastes and wastes collected from households. The OECD Decision provides a framework for OECD member countries to control transboundary movements of recoverable wastes within the OECD area in an environmentally sound and economically efficient manner. The requirements of the Basel Convention and the OECD decision have been implemented in UK law by the Transfrontier Shipment of Waste Regulations 2007⁴² and, at the end of the transition period, will be further implemented by EU Exit Regulations relating to International Waste Shipments. The legislation requires that those involved in the shipment of waste take all necessary steps to ensure waste is managed in an environmentally sound manner throughout its shipment and during its recovery, recycling or disposal. These controls prohibit the export of waste for disposal either by landfill or incineration without energy recovery outside of the European Free Trade Area. It is also prohibited to export hazardous waste to countries that are not members of the Organisation of Economic Cooperation and Development (OECD). In addition, non-hazardous wastes destined for recycling can only be exported to non-OECD countries⁴³ if the country of destination has indicated that it is willing to accept the waste and the waste will be managed in facilities operated in accordance with human health and environmental protection standards that are broadly equivalent to standards established in the UK and EU.

These controls are supplemented by the UK Plan for Shipments of Waste⁴⁴, which implements the long-standing UK policy of self-sufficiency in the disposal of waste by strictly limiting when waste may be shipped to or from the UK for disposal. The Government has also committed to banning the export of plastic waste to countries that are not members of the Organisation for Economic Cooperation and Development (OECD), and will consult on the date by which this should be achieved.

Enforcement of waste shipments legislation

The Environment Agency (EA) is the competent authority responsible for regulating waste shipments to, from or transiting through England. The EA's role includes preventing and disrupting suspected illegal activities and prosecuting offenders. The EA is committed to tackling waste crime in all its forms, including illegal waste shipments. The EA works closely with the other UK competent authorities, UK customs authorities, shipping lines and competent authorities overseas. In 2018/19 the EA inspected 926 shipping containers at port and returned 236 of these to their site of loading. In doing so this stopped 5,349 tonnes of waste being illegally exported. The EA also prevented an additional 7,341 tonnes of waste, unfit for export, from reaching ports through intervention at sites. In total, the EA prevented 12,690 tonnes of waste from being illegally exported during 2018/19. Some waste types, such as waste electrical and electronic equipment, waste tyres and contaminated or mis-described recyclable materials pose a higher risk of deliberate illegal

⁴² <http://www.legislation.gov.uk/ukxi/2007/1711/contents>

⁴³ Countries that are not members of the OECD and not part of the European Union

⁴⁴ <https://www.gov.uk/government/publications/uk-plan-for-shipments-of-waste>

export and the EA's inspections are targeted accordingly, based on intelligence and risk. A producer responsibility investigations team was set up in January 2018. The team is dedicated to detecting fraud and error within the WEEE, Packaging and Batteries systems, including operators that export these wastes.

Waste producers also have an important role to play in ensuring the waste they produce, or collect, is treated in a responsible manner at all stages in the waste management chain and the risk of subsequent illegal export minimised.

Waste services

Managing waste further up the waste hierarchy has required a change in our waste management practices. As waste is increasingly treated as a resource it has led to complexities in our waste management services. These complexities are enhanced by the variation in waste services across England which are delivered by the different tiers of local government, i.e. unitary, county and district levels and by the private sector. Waste services, more specifically waste collection schemes and major disposal and recovery installations for municipal waste, are a matter for local authorities to develop fit for purpose local solutions within the context of the Environmental Protection Act 1990 and subsequent Regulations. Waste services for business waste are largely provided by the private sector as are many of the services for municipal waste commissioned by local authorities.

Measures to promote high quality recycling

The Government has been working with local councils to increase the frequency and quality of waste collections and make it easier to recycle. Further information with regards to existing waste collection schemes can be found in the Resources and Waste Strategy.

The Government supports comprehensive and frequent rubbish collection and recycling. Government has worked with Waste and Resources Action Programme (WRAP) and industry to promote greater consistency in the materials collected for recycling and separate food waste collection. A Framework for Greater Consistency in recycling was published in September 2016⁴⁵. Defra Ministers have engaged with local authorities to promote recycling and to highlight good performance. Defra has also written to all local authorities with a recycling rate below 30% to understand current barriers to recycling more.

In February 2019 the Government published a consultation on measures to increase recycling from households and businesses to support the achievement of a much higher 65% recycling rate for municipal waste by 2035. Consultation on these proposals closed on 13 May 2019 and Government published a summary of its response to the consultation

⁴⁵ <http://www.wrap.org.uk/collections-and-reprocessing/consistency>

on 23 July 2019. This states that, the Government will introduce measures for England to increase household recycling by requiring all local authorities to collect a consistent set of dry materials from households in England; to collect food waste separately from all households on a weekly basis; and to arrange for garden waste collection where necessary. These measures are expected to increase recycling from households from current levels to 65% by 2035. This will support our ability to meet commitments on recycling outlined in the Resources and Waste Strategy.

The Government supports local authorities in improving quality and quantity of recycling and has taken a range of measures to support better quality recycling including:

- Regulation 13 of The Waste (England and Wales) Regulations 2011⁴⁶, which requires an establishment or undertaking that collects waste paper, metal, plastic or glass to take necessary measures to ensure separate collection where this is technically, environmentally or economically practicable (TEEP) and is necessary to improve recovery;
- Publishing a Quality Action Plan for Recycling⁴⁷ in 2013, setting out recommendations for improving the quality of materials collected for recycling;
- Writing to relevant local authority bodies and industry bodies to highlight the risks of glass shards contaminating paper in mixed collections and reducing the value of mixed glass overall and to remind operators to give careful consideration to legal obligations when considering comingled collections, especially if glass is included;⁴⁸
- Requiring operators of materials recovery facilities (MRFs) to sample comingled recycling received for sorting and to report on the levels of contamination recorded for both input and output streams and publishing this sampling data quarterly to provide transparency on the performance of MRFs⁴⁹.

Despite these actions, quality has not improved significantly with many councils following comingled collections and not separating glass from other materials as recommended⁵⁰.

We want to help local authorities improve the quality of what is collected for recycling so that its value can also increase. Therefore, as part of our consultation on consistency in recycling we proposed to clarify the requirements of separate collection in law to make these clearer for local authorities and waste operators to follow. We also proposed to provide statutory guidance to help with decision making on separate collection and when

⁴⁶ <http://www.legislation.gov.uk/uksi/2011/988/contents/made>

⁴⁶ <http://www.wrap.org.uk/content/food-waste-recycling-action-plan>

⁴⁸ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/250013/waste-seperate-collection-201310.pdf

⁴⁹ <https://mfrp.wrap.org.uk/>

⁵⁰ WRAP LA portal data. Percentages add up to 110 as some local authorities use more than one collection system.

local authorities should carry out an assessment of the feasibility or otherwise of separately collected recyclable materials.

Following consultation we have set out requirements for separate collection of recyclable waste streams in the Environment Bill. This will be supported by statutory guidance and further regulations which will be consulted upon in 2021. The statutory guidance will help waste collectors to meet their duties in relation to separate collection and promote high quality recycling. The statutory guidance would also set out the process by which local authorities may collect materials together where separate collection is not technically or economically practicable or there is no overall environmental benefit.

The Resources and Waste Strategy also sets out measures to help consumers to be able to recycle the materials they contain and dispose of them in the most environmentally sensitive ways. This includes consulting on the introduction of a deposit return scheme in England for single-use drinks containers. We have also consulted on increasing our successful 5p plastic bag charge to 10p and extending the scheme to small retailers. The Resources and Waste Strategy also outlines the case for banning the most problematic plastic products where there is a clear case for it and alternatives exist. We have already banned the sale of plastic microbeads in rinse-off personal care products and are introducing a ban on the supply of plastic drinking straws, stirrers and plastic stemmed cotton buds in October 2020, and are assessing the impact of banning other single-use plastic items.

Separate collection of bio-waste

The Government has a range of measures to encourage the separate collection of bio-waste in England, which is often environmentally the best solution. However, currently, the decision to offer a separate collection of food or garden waste is for local councils, taking into account local circumstances including logistics, characteristics of the area, and providing the services local people want. Almost all local authorities collect garden waste separately and about 50% collect food waste either on its own or with garden waste, providing quality feedstocks for anaerobic digestion and composting.

Following on from the commitment in the Resources and Waste Strategy and our consultation on consistency in Spring 2019, we will introduce mandatory separate food waste collection. There was more limited support for free garden waste collection for houses with gardens. We will therefore give further consideration to the costs and benefits of this measure before making a final decision on whether garden waste collections should be free of charge, or whether charging should remain a matter for local decision making. Subject to any further consultation we would expect to introduce these measures from 2023.

Since the publication of the Anaerobic Digestion Strategy in 2011⁵¹, AD growth has been supported by measures such as feed-in tariffs and renewable heat incentives. Energy recovered from anaerobic digestion increased by 5.6 per cent to 2.7 TWh in 2018. AD also produced 7.2 per cent of total renewable heat in 2018. WRAP has estimated that UK food waste sent to AD produces 1,000 GWh, enough to power 1 million homes for over one month.

In the Resources and Waste Strategy the Government also announced that it would carry out and publish a review of policies to support bio-waste recycling through anaerobic digestion and composting to ensure we can maximise the benefits of these treatment options whilst managing the risks. This would include opportunities to promote synergies between food waste and other bio-waste and renewable energy to support decarbonisation of transport, heat and power and we continue to work with BEIS and other Departments on these areas. We also want to ensure that where appropriate farms continue to use AD as a treatment option for managing on-farm waste and recycling nutrients into energy and digestate that can be applied back to land.

Arrangements for hazardous waste

Government's Strategy for Hazardous Waste Management in England⁵² sets out important principles that aim to encourage reductions in hazardous waste arisings and the wider application of the waste hierarchy to the management of hazardous waste.

Hazardous waste management practices and new infrastructure must meet existing regulatory requirements, including those of the Hazardous Waste (England and Wales) Regulations 2005⁵³ and the Environmental Permitting (England and Wales) Regulations 2016⁵⁴. This will help to secure environmentally sound management of hazardous waste. The Hazardous Waste Management Strategy includes information on how some key hazardous wastes are managed. In addition, guidance has been developed on applying the waste hierarchy to hazardous waste⁵⁵ to encourage further the provision of key infrastructure. Our Resources and Waste Strategy also includes a commitment to consult on further ways to encourage hazardous waste producers to implement the waste hierarchy.

Furthermore, under the Planning Act 2008, Defra published in June 2013 a [National Policy Statement for Hazardous Waste](#)⁵⁶ in relation to the development of nationally significant

⁵¹ www.gov.uk/government/publications/anaerobic-digestion-strategy-and-action-plan

⁵² <https://webarchive.nationalarchives.gov.uk/20130505065433/http://archive.defra.gov.uk/environment/waste/topics/hazwaste/documents/policy.pdf>

⁵³ www.legislation.gov.uk/uksi/2005/894/contents/made

⁵⁴ <http://www.legislation.gov.uk/uksi/2016/1154/contents/made>

⁵⁵ <https://www.gov.uk/government/publications/guidance-on-applying-the-waste-hierarchy-to-hazardous-waste>

⁵⁶ <https://www.gov.uk/government/publications/hazardous-waste-national-policy-statement>

hazardous waste infrastructure. The Statement sets out the strategic need and government policy context for the provision of such infrastructure. It is used to guide decisions by the Planning Inspectorate but also provides guidance to developers.

Arrangements for construction and demolition waste

The United Kingdom is committed to meeting its target of recovering at least 70% by weight of non-hazardous construction and demolition (C&D) waste⁵⁷ by 2020.

UK estimates for the recovery rate from non-hazardous C&D waste have been calculated and reported. The methodology for England was originally devised in conjunction with industry and, although not identical to the rest of the UK, efforts have been made to synchronise approaches and methodologies across UK countries.

England and the UK have been comfortably meeting the 2020 target of recovering at least 70% of non-hazardous C&D waste throughout the calculated time-series, with recovery rates of 90% and above since 2010. The latest data for 2016 indicates a recovery rate of 92.1% for England and 91.0% for the UK as a whole⁵⁸.

Table 1 Recovery rate from non-hazardous Construction and Demolition Waste, England, 2010 – 2016

Year	Percentage
2010	92.2%
2011	92.5%
2012	92.0%
2013	92.0%
2014	92.4%
2015	92.3%
2016	92.1%

⁵⁷ This is construction and demolition waste, excluding hazardous waste and naturally occurring material falling within code 17 05 04 in Schedule 1 to the List of Wastes (England) Regulations 2005 (SI 2005/895).

⁵⁸ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784263/UK_Statistics_on_Waste_statistical_notice_March_2019_rev_FINAL.pdf

Arrangements for marine waste

Marine waste can have environmental impacts through accidental pollution from ships in the course of navigation or lawful operations, pollution caused by unlawful operational discharges by ships, such as oil, waste or sewage, or physical damage caused by groundings or collisions.

Marine waste is regulated by both domestic law and international conventions that the UK has signed up to. These are the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978⁵⁹, OSPAR Convention 1992⁶⁰; the London Convention and Protocol⁶¹; the Marine and Coastal Access Act 2009⁶²; and the Merchant Shipping (Prevention of Pollution by Sewage and Garbage from Ships) Regulations 2008⁶³ which provides domestic regulation.

Marine plans set out priorities for future development, help marine users understand the best locations for their activities and set out issues to be considered, including in relation to water quality and litter. Public authorities must take authorisation or enforcement decisions that might affect the UK marine area (except development consent order applications made under the Planning Act 2008) in accordance with the Marine Policy Statement⁶⁴ and relevant marine plans, unless relevant considerations indicate otherwise. They must have regard to the Marine Policy Statement and relevant marine plans when taking other decisions that might affect the UK marine area.

Marine litter is regulated through the above laws and conventions, and our strategy to address the issue is set out in the [25 Year Environment Plan](#)⁶⁵, the [UK Marine Strategy Part 3](#)⁶⁶ and the Resources and Waste Strategy. The Marine Strategy Part Three sets out the UK programme of measures, including measures to tackle marine litter, that contribute to the achievement and maintenance of Good Environmental Status in UK seas and fulfils the requirement in the Marine Strategy Regulations 2010⁶⁷.

⁵⁹www.gov.uk/government/publications/min-585-m-the-international-convention-for-the-prevention-of-pollution-from-ships-1973-as-modified-by-the-protocol-of-1978-marpol-7378-annex-i

⁶⁰ www.ospar.org/convention

⁶¹ www.imo.org/en/OurWork/Environment/LCLP/Pages/default.aspx

⁶² www.legislation.gov.uk/ukpga/2009/23/pdfs/ukpga_20090023_en.pdf

⁶³ [SI 2008/3257](#) & [2010/897](#)

⁶⁴ www.gov.uk/government/publications/uk-marine-policy-statement

⁶⁵ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf

⁶⁶ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/486623/marine-strategy-part3-programme-of-measures.pdf

⁶⁷ SI 2010/1627

[The Water Environment \(Water Framework Directive\) \(England and Wales\) Regulations 2017](#)⁶⁸ applies to surface waters (including some coastal waters) and groundwater (water stored below the ground in rocks or other geological strata). These regulations set out requirements to prevent deterioration of aquatic ecosystems and protect, enhance and restore water bodies to 'good' status. Local planning authorities must, in exercising their functions, have regard to [river basin management plans](#)⁶⁹. These plans contain the main issues, including litter in the water environment and the actions needed to tackle them.

Since 1998, in compliance with international obligations, the UK administrations have, with some minor exceptions, only licensed the disposal at sea of capital and maintenance dredging and small amounts of fish waste. Most marine dredging and disposal is for the purposes of navigation and existing and future port development, though other works can take place to facilitate the construction of pipelines, outfalls and tunnels.

Disposal of dredged material at sea is regulated by the Marine Management Organisation under the licensing provisions of the Marine and Coastal Access Act 2009. Those wishing to dispose of marine waste must demonstrate that appropriate consideration has been given to the internationally agreed hierarchy of waste management options for sea disposal. Waste is not accepted for disposal where appropriate opportunities exist to re-use, recycle or treat the waste without undue risks to either human health or the environment, or disproportionate costs.

Regulators undertake a detailed evaluation of the potential adverse effects of any dredging activity or deposit on the marine ecosystem and others using the sea. This should have full regard to any accompanying environmental statement or additional data that may be requested in support of the application and international obligations under the OSPAR Convention and London Convention, as well as any other available guidance.

The Marine Management Organisation considers the potential adverse effects on the marine environment, habitats and wildlife from dredging activity. Particular recognition is given to the implementation and use of the maintenance dredging protocol⁷⁰ to minimise impacts on habitats and wildlife and help meet statutory obligations in relation to European Sites (also known as Natura 2000 sites).

Fish waste from processing of fish at sea may be disposed of in the marine environment but this is subject to the marine licensing provisions of the Marine and Coastal Access Act 2009.

Burial at sea is generally discouraged but is allowed in some circumstances, subject to licensing. There are three designated sites where burials may take place: Needles, Isle of

⁶⁸ [SI 2017/407](#)

⁶⁹ <https://www.gov.uk/government/collections/river-basin-management-plans-2015>

⁷⁰ <https://www.gov.uk/guidance/do-i-need-a-marine-licence>

Wight; off Tynemouth, North Tyneside; and between Hastings and Newhaven on the south coast.

Business waste

Business waste incorporates commercial waste and industrial waste. Generally, businesses are expected to make their own arrangements for the collection, treatment and disposal of their wastes. Waste from smaller shops and trading estates where local authority waste collection agreements are in place will generally be treated as municipal waste (this is waste similar to household waste i.e. paper, card etc.).

As referred to in the Resources and Waste Strategy all business, from the micro-business to the multi-national, should have access to regular, efficient and affordable waste collection and recycling services, whether provided by the private sector or their local authority.

Waste prevention sits at the top of the waste hierarchy as preventing waste has the best environmental outcome. It can save businesses and consumers money, and avoids costs to businesses and local authorities of dealing with the waste that would otherwise be produced. Both the [Waste Prevention Programme](#)⁷¹ and the Resources and Waste Strategy consider waste as a resource and identify opportunities for waste prevention to benefit business sectors and the wider economy.

Business recycling

We want to increase the amount of household like material collected from businesses and other organisations in the municipal waste sector so that we can increase recycling of waste overall and achieve challenging targets to recycle 65% of municipal waste by 2035. Our latest best available estimates for recycling in this sector put recycling rates between 34 and 40%. This is relatively low and we think we can achieve much higher rates of recycling with the right combination of measures and support. As part of our consultation on consistency in recycling we sought views on proposals to require businesses and other organisations to segregate dry recyclable waste and food waste from other waste so that it can be collected for recycling. These proposals were strongly supported and we have put forward duties for separate collection of recyclable waste from households, non-domestic premises and commercial and industrial premises in the Environment Bill. We will give further consideration to measures to reduce the costs of collection for small and micro firms, taking into account comments and evidence provided from the consultation, as well as discussions with stakeholders and business on implementation.

The Government's Cycling and Walking Strategy also states that the government will work with key stakeholders to explore options to allow local authorities to better co-ordinate the

⁷¹ <https://www.gov.uk/government/publications/waste-prevention-programme-for-england>

number of deliveries and waste collections in certain areas, still allowing competition and choice but reducing the number of operators and vehicle movements. Parts of some cities are served by as many as 50 waste management and delivery companies, with multiple pickups from businesses on the same street and large numbers of delivery vehicles carrying out duplicating trips. Pilot projects in areas such as Mayfair, in the West End of London, which aim to reduce the number of suppliers, have brought about significant reductions in commercial vehicle traffic. Government will conduct further pilot projects to allow local authorities to franchise certain delivery and waste management services where appropriate.

Extended producer responsibility including producer responsibility for packaging

Extended Producer Responsibility (EPR) is an 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 re-used, dismantled and/ or recycled at end of life. Alongside stakeholders, we consider EPR to be a crucial tool in moving waste up the hierarchy and stimulating growth in the secondary materials markets.

There are currently UK-wide producer responsibility schemes in place for:

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

Our Resources and Waste Strategy sets out our intention to review the existing producer responsibility systems and develop new EPR schemes. This includes reviewing and consulting on measures such as EPR and product standards for five new waste streams by 2025, two of which are planned to be completed by the end of 2022.

Packaging waste

The key regulations in relation to packaging and packaging waste are the Packaging (Essential Requirements) Regulations 2015 and the Producer Responsibility Obligations (Packaging Waste) Regulations 2007⁷². The former contains requirements that must be satisfied before packaging can be placed on the market, whilst the latter establish a

⁷² S.I 2007/871 as last amended by SI 2012/3082

'producer responsibility' regime and set targets on producers for the recycling and recovery of packaging waste.

The Producer Responsibility Regulations make producers (i.e. businesses that manufacture, import and sell certain products) responsible for ensuring a proportion of the packaging they place on the market is recycled and recovered once it has reached end of their life.

To date the targets have delivered environmental and economic benefits and from increasing the recycling of all the key materials including plastics, card, metals and glass. Targets are in place to 2020 and targets for 2021 and 2022 will be announced in Autumn 2020.

The Resources and Waste Strategy sets out how we plan to reform the current "Producer Responsibility" scheme and the reasons for doing so. It also provides the principles that will be central to any future EPR scheme. Together with the devolved administrations we consulted on our initial proposals for a reformed packaging producer responsibility system in Spring 2019 and will consult on our final proposals in early 2021.

Waste electrical and electronic equipment, batteries and vehicles

Statutory producer responsibility regimes in the UK also cover waste electrical and electronic equipment (WEEE), batteries and vehicles. These regimes all provide for producers to bear the financial costs of collecting, treating, and recycling/ recovering a proportion of their waste products/ packaging to meet legal targets and minimum standards. For batteries, there is a 45% collection requirement for portable batteries, with a landfill disposal and incineration ban in place for industrial and automotive batteries. For ELVs, there is a 95% reuse, recycling and recovery requirement. From 2019, the collection rate for WEEE is 65%. The regimes achieve this in a number of ways, but typically through administrative processes such as producer registration, approvals of compliance schemes and the authorisation of treatment facilities. We are committed to reviews of all three regimes in the period 2021-2024.

Introducing extended producer responsibility to other waste streams

The Resources and Waste Strategy sets out our intention to review and consult on measures such as EPR and product standards for five new waste streams, two of which we plan to complete by the end of 2022. These are:

- Textiles (including all clothing, as well as other household and commercial textiles, such as bedlinens);
- Bulky waste (including mattresses, furniture, and carpets);
- Certain materials in the construction and demolition sector;

- Vehicle tyres (including tyres from cars, motorcycles, commercial and goods vehicles, and heavy machinery); and
- Fishing gear.

We are currently considering where EPR could potentially improve waste management under these five areas and how this might work. In particular, construction and demolition cover a wide range of waste streams and there is a need to explore the specific products that might fall within the scope of EPR.

We are also committed to taking action to reduce the waste produced by plastics, including single-use plastics, and will take the necessary action to tackle the problem of plastic waste in our environment.

Measures to combat and prevent all forms of littering and to clean-up all types of litter

There is a comprehensive range of legislative measures in place to combat litter and littering in England.

Section 87 of the Environmental Protection Act 1990, as amended, makes it a criminal offence to “throw down, drop or otherwise deposit any item, and leave it”. The offence applies to all land in England that is open to the air, including private land and land covered by water.

Local authorities, national park authorities, the Broads Authority and police community support officers have powers to take enforcement action against offenders. Anyone caught littering may be prosecuted in a magistrates’ court, which can lead to a criminal record and a fine of up to £2,500 on conviction. Instead of prosecuting, councils may decide, under section 88 of the Act to issue a fixed penalty notice, otherwise known as an ‘on-the-spot fine’, of up to £150. Under section 88A, councils in England outside London can also issue civil penalties (not carrying criminal liability) to the keeper of any vehicle from which a littering offence is committed. Councils in London have similar powers under the London Local Authorities Acts 2007 and 2012⁷³.

Section 89 of the Environmental Protection Act 1990 also imposes two distinct duties on a range of bodies to “keep their relevant land clear of litter and refuse” and to “keep the highways clean”⁷⁴. In complying with these duties, “duty bodies” (district councils, highway authorities, educational institutions, the Crown and statutory undertakers such as rail and tram operators and water companies) must “have regard to” the statutory Code of Practice

⁷³ www.legislation.gov.uk/ukla/2012/2/contents/enacted

⁷⁴ “Relevant land” is land under the direct control of the duty body, which is open to the air on at least one side, and to which the public has access with or without payment.

on Litter and Refuse⁷⁵. The Code sets out the legal standards that duty bodies are expected to be able to achieve in carrying out these duties on different types of land and seeks to encourage duty bodies to maintain their land within acceptable cleanliness standards. The emphasis is on the consistent and appropriate management of an area to keep it clean, not on how often it is cleaned.

To assist them in achieving these standards, litter authorities (predominantly district councils) have access to a range of other powers and duties designed to deter littering and prevent the defacement of land by litter and waste:

- The Control of Pollution Act 1974⁷⁶ places a duty on all councils within a county area to consult 'from time to time' with each other and relevant voluntary organisations about what steps are to be taken to abate litter generally within the county.
- The Litter Act 1983⁷⁷:
 - provides the Secretary of State (with the Treasury's consent) the power to make grants to anybody for the purpose of assisting the body to encourage the public not to deface places by litter;
 - provides a power for councils to install litter bins in any street or public place, with an associated duty to clean and empty the bins regularly.
- Section 94B of and Schedule 3A to the Environmental Protection Act 1990, enable principal litter authorities (county or district councils or London boroughs) to designate areas of their land within which authorisation is required before free printed material may be distributed.⁷⁸ Unauthorised distribution within these areas is a criminal offence, punishable by a fine of up to £2,500 or a fixed penalty in lieu of prosecution of up to £150.
- The Refuse Disposal (Amenity) Act 1978⁷⁹ makes it an offence to abandon a motor vehicle, or part of a motor vehicle, on any land open to air. It also imposes a duty on local authorities (including National Park Authorities⁸⁰) to remove abandoned vehicles from land, unless the cost of moving the vehicle to the nearest carriageway would be unreasonably high.

⁷⁵ www.gov.uk/government/publications/code-of-practice-on-litter-and-refuse

⁷⁶ www.legislation.gov.uk/ukpga/1974/40

⁷⁷ www.legislation.gov.uk/ukpga/1983/35

⁷⁸ The distribution of material for charitable, political, or religious purposes may not be restricted under these powers.

⁷⁹ www.legislation.gov.uk/ukpga/1978/3

⁸⁰ Under Schedule 9 paragraph 5 of the Environment Act 1995, national park authorities have the same powers and duties as local authorities in respect of abandoned vehicles.

- The Anti-social Behaviour, Crime and Policing Act 2014⁸¹ provided local agencies (councils, local police forces and registered social housing providers) with a range of flexible powers to tackle various anti-social and nuisance behaviours.
 - Community Protection Notices (CPN) may be used to deal with particular, ongoing problems or nuisances which negatively affect the community's quality of life, by targeting those responsible. CPNs can include requirements to do, or not do, specified things, or to take reasonable steps to achieve specified results. They may therefore be used to tackle litter problems associated with particular premises (including businesses) by requiring them to clear up litter around their premises and/or provide and maintain suitable bins.
 - Public Space Protection Orders (PSPOs) provide similar protection from nuisances in public spaces by imposing conditions on the use of that area. For example, a PSPO may be used to require dog owners to pick up their dog's faeces.
- Section 215 of the Town and Country Planning Act 1990⁸² gives a local authority the power to serve a notice on any landowner whose failure to maintain their land is adversely affecting the amenity of the surrounding area, requiring them to remedy the problem.

In addition to the legislative provisions outlined above, a number of policy measures are also in place to tackle and reduce littering.

We published the [Litter Strategy for England](#)⁸³ in April 2017, setting out our aim to clean up the country and deliver a substantial reduction in litter and littering within a generation. The Litter Strategy brings together communities, businesses, charities and schools to bring about real change by focusing on three key themes: education and awareness; improving enforcement; and better cleaning and access to bins. It features poignant images of wildlife eating and getting tangled in litter, contrasted against typical excuses people give for dropping litter. We have also said that we will ensure that, subject to consultation, charging arrangements in the Controlled Waste (England and Wales) Regulations 2012 are clear, especially in relation to waste arising from small scale DIY construction activities carried out by ordinary householders with no specialist skills, which Government has been clear should not be charged for.

We also want to see businesses recognising what they can do to discourage the littering of their products, and the potential benefits to their brand of being associated with reducing, rather than causing litter. The Resources and Waste Strategy includes measures that will help to change the way we use and think about our resources, and help to reduce litter

⁸¹ www.legislation.gov.uk/ukpga/2014/12/contents/enacted

⁸² www.legislation.gov.uk/ukpga/1990/8/contents

⁸³ www.gov.uk/government/publications/litter-strategy-for-england

along the way. Such measures include ensuring producers pay the full costs for disposal or recycling of packaging they place on the market, by extending producer responsibility – including items that can be harder or costly to recycle. Another measure is a deposit return scheme to increase the recycling of single-use drinks containers. These measures are discussed earlier in the Waste Services section.

Assessment of need for new collection schemes and infrastructure, the closure of waste infrastructure, including an assessment of the investments and other financial means

Infrastructure

The Resources and Waste Strategy sets out that having the right infrastructure in place is key to changing society's mind-set and encouraging people to 'do the right thing'. The policies in the RWS seek to speed up this process – helping people value the resources that pass through their hands, and supporting them with the right infrastructure to keep those resources in use.

We continue to support local authorities to facilitate the provision of necessary waste infrastructure, recognising that local communities should be involved from an early stage in planning for such infrastructure.

The closure of waste infrastructure

The Environment Agency regulates the closure of permitted waste operations through surrender notifications and applications. Operators of some regulated facilities may simply notify the Environment Agency but others must make an application to the regulator as required under regulations 24 and 25 of the Environmental Permitting (England and Wales) Regulations 2016. It is also possible to surrender part of an environmental permit, for example, if the operator is reducing the extent of a permitted site. Where there is a partial surrender, the regulator may need to vary the permit conditions to reflect this.

Specific provisions apply to the closure of landfill sites when an operator ceases accepting waste for disposal and their site enters the aftercare phase. Closed landfill sites fall into three categories:

- (i) sites that are permitted and closed after 16 July 2001 in accordance with the requirements of Schedule 10 to the Environmental Permitting (England and Wales) Regulations 2016,

- (ii) sites that are permitted but closed before 16 July 2001; and
- (iii) sites that are no longer regulated by an environmental permit (historic closed landfills).

When the waste in the landfill has stabilised physically and chemically, the operator may apply to the regulator to surrender their permit⁸⁴.

Proximity principle

The principle of 'proximity' is set out in paragraph 4 of Part 1 of Schedule 1 to the Waste (England and Wales) Regulations 2011. This is within the context of the requirement to establish an integrated and adequate network of waste disposal installations for recovery of mixed municipal waste collected from private households. The requirement includes where such collection also covers waste from other producers.

The network must enable waste to be disposed of, or be recovered, in one of the nearest appropriate installations, by means of the most appropriate methods and technologies, in order to ensure a high level of protection for the environment and public health.

The network shall be designed in such a way as to enable a movement towards the aim of self-sufficiency in waste disposal and the recovery of waste. However, consideration must be given to the geographical circumstances or the need for specialised installations for certain types of waste.

This principle must be applied when decisions are taken on the location of appropriate waste facilities.

Waste planning

The government is currently consulting on major reforms to the planning system⁸⁵ which seeks, amongst other things, to radically change how local plans are prepared and function. These reforms, if taken forward, would mean consequential changes to the National Planning Policy Framework (NPPF)⁸⁶ and to the National Planning Policy for Waste (NPPW)⁸⁷ to reflect any agreed changes.

The current NPPW sets out existing planning policy to be taken into account by waste planning authorities and should be read in conjunction with the NPPF. This requires local planning authorities to include strategic policies in their development plans setting out an

⁸⁴ <https://www.gov.uk/government/publications/landfill-epr-502-and-other-permanent-deposits-of-waste-how-to-surrender-your-environmental-permit>

⁸⁵ [Planning for the Future, MHCLG, Aug 2020](#)

⁸⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf.

⁸⁷ <https://www.gov.uk/government/publications/national-planning-policy-for-waste>

overall strategy for the pattern, scale and quality of development, and to make sufficient provision for infrastructure for waste management, and energy (including heat). The Resources and Waste Strategy sets out the Government's objective of supporting the need for resource and waste management infrastructure through the planning system including a greater emphasis on the circular economy.

National planning policy for waste aims to help achieve sustainable waste management by securing adequate provision of new waste management facilities of the right type, in the right place and at the right time. Under the national planning policy approach, waste planning authorities should identify in their local waste plans areas suitable for new or enhanced facilities for the waste management needs of their area. In deciding which land to identify for such facilities, waste planning authorities should assess their suitability against the criteria set out in the policy. This includes the physical and environmental constraints on development, existing and proposed neighbouring land uses, and any significant adverse impacts on the quality of the local environment.

Strategic policy-making authorities should cooperate with each other, and other bodies, when preparing, or supporting the preparation of policies which address strategic matters, including policies contained in local waste plans. In particular, joint working should help to determine where additional infrastructure is necessary, and whether development needs that cannot be met wholly within a particular plan area could be met elsewhere. Further consideration is to be given as to the optimal way in which strategic cross-boundary issues, such as major infrastructure or strategic sites, can be adequately planned for, including the scale at which plans are best prepared in areas with significant strategic challenges.

All local planning authorities should have regard to both the Waste Management Plan for England, the national waste planning policy and the Resources and Waste Strategy when discharging their responsibilities to the extent that they are appropriate to waste management. Waste planning authorities remain responsible for developing local authority waste plans as part of their wider strategic planning responsibilities, in support of the Waste Management Plan for England.

Location

The Environment Agency hold information which can be used to aid decisions about the allocation of sites by type of infrastructure required, its location and capacity. The following links are to data sources held by the Environment Agency and which are available on the gov.uk website:

- [Waste statistics compendium](#)⁸⁸ – this section provides information on waste arising, treatment, recycling figures and statistics from other relevant regimes (e.g. Producer Responsibility).
- [Permitted Waste facilities](#)⁸⁹ – list of permitted sites and applications (note zipped files).
- [Waste data interrogators](#)⁹⁰ – this data set is comprised of returns made to the EA on waste handled at permitted facilities.
- [Waste Incineration data](#)⁹¹ – this data is required in addition to the interrogator data, to give correct totals for waste handled, treated and disposed.
- [Landfill capacity data](#)⁹² – this data is also required to be used alongside the other data sets, to arrive at a meaningful figure for waste treatment and disposal capacity when plan making.
- [Hazardous waste data interrogator](#)⁹³ – hazardous waste carries additional regulatory requirements, which translate into planning considerations under the Duty to Cooperate.
- [The Waste Hierarchy](#)⁹⁴ – Plans must have regard to the Waste Hierarchy in the management of waste.

Need for additional infrastructure

The National Infrastructure Commission published their first National Infrastructure Assessment (NIA) in July 2018, which set out their assessment of the UK's long-term infrastructure needs⁹⁵, including resources and waste, making over 60 recommendations to the government based on extensive consultation. The Government will respond to these recommendations through a National Infrastructure Strategy.

Published annually since 2011, the National Infrastructure and Construction Pipeline details planned infrastructure and construction investment across the public and private sectors, including energy from waste and advanced conversion technologies. The pipeline provides a forward look on infrastructure, and builds on the work of the National

⁸⁸ <https://data.gov.uk/dataset/882186e7-97b0-4ad0-b253-e28607252f42/uk-statistics-on-waste>

⁸⁹ <https://ea.sharefile.com/share/view/s4d607c5444344269>

⁹⁰ <https://data.gov.uk/dataset/312ace0a-ff0a-4f6f-a7ea-f757164cc488/waste-data-interrogator-2018>

⁹¹ <https://ea.sharefile.com/share/view/sd8fd3ec9e7245abb>

⁹² <https://data.gov.uk/dataset/237825cb-dc10-4c53-8446-1bcd35614c12/remaining-landfill-capacity>

⁹³ <https://data.gov.uk/dataset/959a9e9e-1571-42f9-b7f4-a04800d16560/hazardous-waste-interrogator-2007>

⁹⁴ <https://www.gov.uk/government/publications/guidance-on-applying-the-waste-hierarchy>

⁹⁵ www.nic.org.uk/assessment/national-infrastructure-assessment/

Infrastructure Delivery Plan, as well as previous [National Infrastructure Plans](#)⁹⁶ by providing a delivery record of infrastructure projects and an update on the status of all projects flagged as priorities since 2010.

In July 2019 the Government published a Green Finance Strategy⁹⁷ which sets out a clear framework for how investment will be increased in key clean growth and environmental sectors. Through providing the policy certainty the Resources and Waste Strategy will unlock the increased investment needed in infrastructure to support delivery of those policies and ambitions around financing green investment. Work to improve waste data will support the Green Finance Strategy's ambitions. This will enable people to keep resources in use for longer and prevent waste occurring in the first place, and to develop and enhance domestic reprocessing infrastructure, particularly recycling. It welcomes continued further market investment in residual waste treatment infrastructure, particularly where this links up with local heat users or heat networks. The Strategy commits to ensuring that local authorities are resourced to meet new net costs arising from the policies in the Strategy, including up front-transition costs and ongoing operational costs. The Government has also supported local authorities in delivering infrastructure investment through a Local Infrastructure Rate⁹⁸.

Through our Resources and Waste Strategy we have committed to increasing municipal recycling rates from households and from businesses and other establishments that produce waste similar to household waste. These reforms will see changes in the collection infrastructure needed for both local authorities and businesses, in particular for the collection and treatment of food waste and potentially garden waste. We have recognised that where new burdens arise from new statutory duties on local authorities', Government should pay the net costs of these burdens. We will work with local government and business regarding changes in infrastructure needs to ensure these are taken into account in implementing measures.

We also want to increase recycling from flats and are proposing that measures that apply to kerbside households should apply equally to flats. Building Regulations Approved Document H6⁹⁹, Para 1.1 – 1.23 sets out requirements for siting and design of waste provision in high- and low-rise developments and states that adequate bin storage should be provided including for waste which can be recycled. We recognise that there may be circumstances, such as high-rise flats or flats above commercial premises, where additional considerations may apply. We have received views on these as part of our

⁹⁶ <https://www.gov.uk/government/organisations/infrastructure-uk/series/national-infrastructure-plan>

⁹⁷ <https://www.gov.uk/government/publications/green-finance-strategy>

⁹⁸ <https://www.dmo.gov.uk/media/15507/180521-local-infrastructure-rate-bidding-criteria-april-2018-v2.pdf>

⁹⁹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/442889/BR_PDF_AD_H_2015.pdf

consultation on consistency and will take these into account in developing this policy and statutory guidance on service standards and separate collection.

The Waste Infrastructure Delivery Programme (WIDP) was set up in 2006 to address a potential shortfall in residual waste treatment capacity needed in order for England to meet the landfill reduction target for biodegradable municipal waste set out in the Landfill (Maximum Landfill Amount) Regulations 2011¹⁰⁰. It continues to provide grant support to a number of local authority projects, including facilities to help improve recycling, such as materials recovery facilities and anaerobic digestion plants.

In monitoring progress towards meeting landfill targets, we estimate that we will have sufficient residual waste treatment infrastructure, on reasonable assumptions, to meet our 2020 obligations under the Waste and Emissions Trading Act 2003 and the Landfill (Maximum Landfill Amount) Regulations 2011.

The Government offers innovation funding for low-carbon technologies which includes infrastructure to manage or use waste as an energy resource, encourages investment from abroad and provides ongoing non-financial support to local authorities.

Collection infrastructure

The Government supports comprehensive and frequent rubbish and recycling collections that meet the needs of local residents. Local authorities in England are under a legal obligation under the Environmental Protection Act 1990¹⁰¹ to provide waste collections to households. From 2003, they have also been under a duty to collect at least two types of recyclable waste separately where they have a duty to collect household waste. From 1 January 2015, local authorities have been under a duty to collect waste paper, metal, plastic or glass by way of separate collection where this is necessary to ensure that waste undergoes recovery operations and to comply with the waste hierarchy and to facilitate or improve recovery; and where such separate collection is technically, environmentally and economically practicable.

As noted in the section on measures to promote high quality recycling, the Government has also been working with local authorities to increase the frequency and quality of waste collections, making it easier to recycle and to encourage reward schemes to increase recycling.

As stated earlier, we are consulting on measures to increase consistency in the materials collected for recycling and would expect these reforms to impact upon necessary collection infrastructure. In particular, proposals to require separate weekly collection of food waste would lead to additional infrastructure for this. Also, where local authorities introduce greater separate collection to improve the quality of materials this too would

¹⁰⁰ SI 2011/2299.

¹⁰¹ www.legislation.gov.uk/ukpga/1990/43/contents

impact on collections infrastructure. Within England, local authorities assess the need for any changes to collection arrangements that best fit their local circumstances and meet the legal obligations to collect waste. At a national level, the Waste and Resources Action Programme (WRAP) assesses the performance of local authority collection arrangements in terms of yields of residual waste and of dry recyclables¹⁰². This work will help to inform future decisions on collection schemes. We have committed to funding the net costs of new burdens on local authorities arising from new statutory duties introduced to increase consistency in recycling and we will work with local government bodies to develop our assessment of costs and changes necessary. Where collections infrastructure has to change we would expect this to be done at the earliest opportunity allowed for by contractual obligations.

Technologies for managing residual waste

The Resources and Waste Strategy promotes efficient energy recovery from residual waste but the Government does not express a preference for one technology over another, since local circumstances differ. Efficient energy recovery from residual waste which can deliver environmental benefits, reduce carbon impacts and provide economic opportunities, and innovative technologies which improve the environmental outcome for the treatment of residual waste are welcomed. For example, the Government encourages innovative waste treatment technologies that create transport fuels through the Renewable Transport Fuels Obligation.

The Resources and Waste Strategy recognises that energy from waste is generally the best management option for waste that cannot be reused or recycled in terms of environmental impact and getting value from the waste as a resource. It promotes the greater efficiency of energy from waste plants through utilisation of the heat generated in district heating networks or by industry, and by seeking an increase in the number of plants obtaining R1 recovery status¹⁰³. Any given technology is more beneficial if both heat and electricity can be recovered. Particular attention should therefore be given to the location of the plant to maximise opportunities for heat use.

The Resources and Waste Strategy considered whether further capacity was needed to manage residual waste and welcomed further continued investment in energy from waste facilities that raises efficiency standards and minimises impacts on the environment.

¹⁰² <http://www.wrap.org.uk/content/local-authority-waste-and-recycling-information>

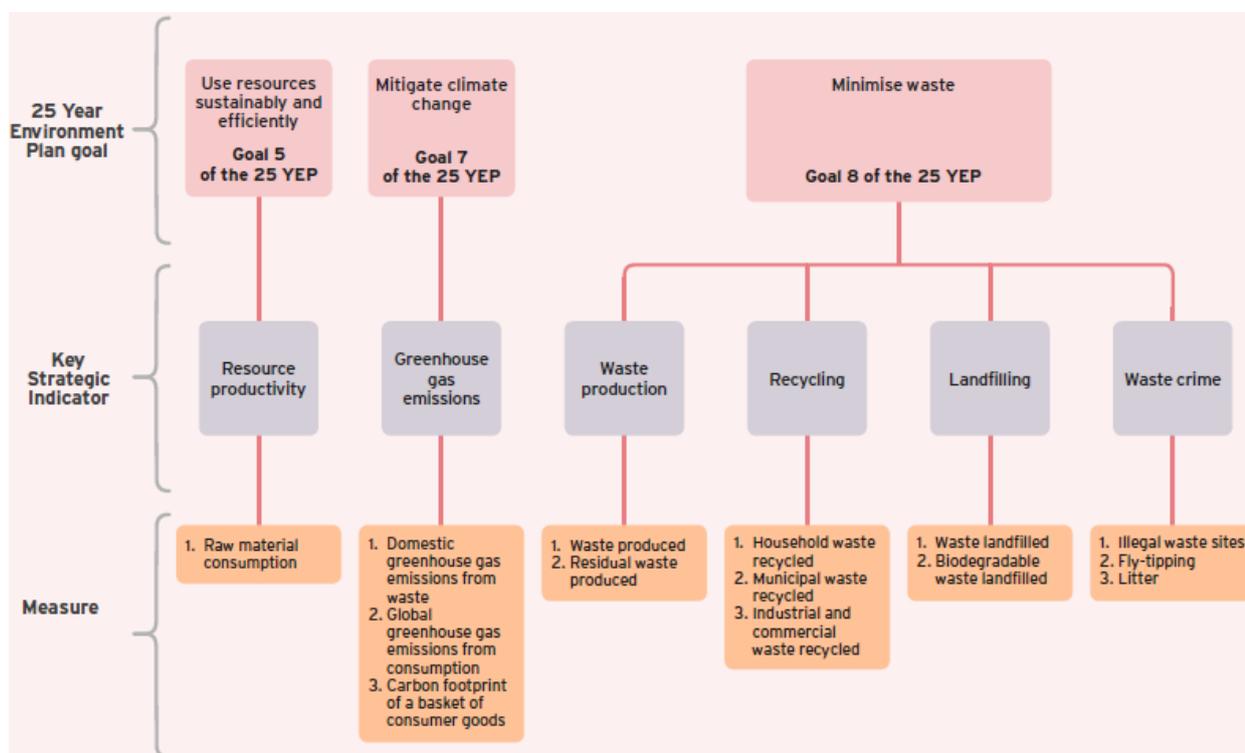
¹⁰³ 'R1' Recovery status acts as a proxy for the energy-generating efficiency of facilities. Facilities, including gasification and pyrolysis plants, which achieve the status are classed as a recovery operation for the purposes of the waste hierarchy and so are a level up from the bottom rung of 'disposal'.

Evaluation of the development of waste streams in the future

The policies that are summarised in this document are designed to achieve the aims of the Waste (England and Wales) Regulations 2011 and the Resources and Waste Strategy, which are to protect the environment and human health by preventing or reducing the generation of waste, the adverse impacts of the generation and management of waste and by reducing overall impacts of resource use and improving the efficiency of such use.

Our policies will directly affect the extent, nature and treatment of waste streams in the future. We expect that this will include a continuing reduction in the amount of waste sent to landfill and an increase in the products and material that are reused, recycled or recovered. In the Resource and Waste Strategy we published an outline indicator framework for monitoring progress against RWS policies and commitments. It consists of a number of measures which reflect progress against six broad categories. These are increasing resource productivity, reducing greenhouse gas emissions, reducing waste production, increasing recycling and reducing landfilling. The Government have committed to regularly publishing and reviewing these (See Figure 6 below).

Figure 6 Indicator Framework for Monitoring the Resources and Waste Strategy



Where not yet completed, work is ongoing to develop the indicators outlined in the Resources and Waste Strategy for tracking performance against the Government's strategic commitments and ambitions related to resource use, waste production and waste management. These include not only those commitments set out in the Resources and

Waste Strategy, but also those in the 25 Year Environment Plan, the Clean Growth Strategy, the Industrial Strategy and the Litter Strategy.

The Government has published a [Resources and Waste Strategy Evaluation Plan together with a Monitoring Progress document](#)¹⁰⁴ which provides information on the reporting mechanism for tracking these indicators.

The evaluation plan clearly and transparently sets out the high level provisions for evaluating the impact of the key policies set out in the Resources and Waste Strategy, which will affect the development of waste streams in the future. It explains how we will monitor and report the progress of the strategy in achieving change, through identifying to what extent policy initiatives are working as intended and citing evidence to suggest how much of the observed impacts are due to the strategy, rather than external factors.

As well as setting out the high level principles and approaches it will include more detailed plans for six initial evaluation projects. These policies being evaluated are expected to deliver significant and measurable changes for the better and the policies are sufficiently well developed that we can start to explore how we might evaluate them. Table 2 lists the outline plans for the initial evaluation projects.

Table 2 Evaluation of Resource and Waste policies

Policy to be evaluated	Likely approach
The new provisions for extended producer responsibility on packaging waste	<p>Multi-method approach involving process and impact evaluation to feed into the required post-implementation review</p> <p>Initial process evaluation to start 2024, depending on speed of implementation Initial impact evaluation to start 2026, depending on speed of implementation</p>
The new provisions on a deposit return scheme for drinks containers (subject to introduction)	<p>Multi-method approach involving process and impact evaluation to feed into the required post-implementation review</p> <p>Initial process evaluation to start 2024, depending on speed of implementation Initial impact evaluation to start 2026, depending on speed of implementation</p>

¹⁰⁴ <https://www.gov.uk/government/publications/resources-and-waste-strategy-for-england-monitoring-and-evaluation>

<p>The effectiveness of Resources and Waste Strategy actions on the use and waste of plastics</p>	<p>Wide-ranging, theory-based impact evaluation deploying both qualitative and quantitative methods. It will look across Government at actions targeting plastics to draw conclusions about successes</p> <p>Scoping to take place in 2019. Start date 2026, depending on speed of implementation of key actions</p>
<p>The effectiveness of the requirement for consistent collections</p>	<p>Potential trial-based approach, else theory-based approach combined with possible modelling. This will build on lessons from similar studies carried out by WRAP and others. It will also build on the evaluation of consistency pilots, being carried out currently</p> <p>It will focus on quantitatively assessing the impact of the policy. A quantitative study may be preceded by a more qualitative process evaluation</p> <p>Start date 2025, depending on speed of implementation of key actions</p>
<p>The effectiveness of measures to tackle waste crime and poor performance (failure to comply with rules for transporting, storing or disposing of waste)</p>	<p>Wide-ranging, theory-based impact evaluation deploying both qualitative and quantitative methods. Operational data will be used to assess changes in incidence of waste crime and poor performance.</p> <p>Primary qualitative research will seek to understand how measures were delivered and the mechanisms and causes of observed changes.</p> <p>An economic evaluation will be undertaken to seek to draw conclusions on overall value for money,</p> <p>Scoping of available operational data and collection of baseline incidence data to begin 2020.</p> <p>Start date 2024, depending on speed of implementation of key actions</p>
<p>Analysis of the contribution the Resources and Waste Strategy has made to observed changes</p>	<p>Theory-based study utilising contribution analysis or realist impact evaluation techniques. It will focus on describing qualitatively the context, mechanisms and outcomes of interventions included in the Resources and Waste Strategy to devise a contribution story</p> <p>Start date 2028/9</p>

The evaluation will be conducted in accordance with the HM Treasury guidance on evaluation, the Magenta Book¹⁰⁵

¹⁰⁵ HM Treasury (2011) <https://www.gov.uk/government/publications/the-magenta-book>