



Department
for Environment
Food & Rural Affairs

Resources and Waste Strategy

Monitoring Progress



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Contents

1	Introduction	1
1.1	Purpose of this document	1
1.2	Timing	2
1.3	Quality assurance	2
1.4	Updating Monitoring Progress	3
2	Monitoring	4
2.1	Headline indicators	4
2.2	Summary of data sources	7
2.3	Proxy Indicators	10
2.4	Strategic ambitions, targets and commitments	12
2.5	Moving beyond weight-based metrics	14
3	Data trends	16
3.1	Resource productivity	16
3.2	Greenhouse gas emissions	21
3.3	Waste production	26
3.4	Recycling	47
3.5	Landfilling	65
3.6	Waste crime	72
	Appendix A – Data sources	78
	Appendix B – Indicator metadata	82
	Resource productivity	82
	Greenhouse gas emissions	84
	Waste production	88
	Recycling	100
	Landfilling	109
	Waste crime	114

WP2. Avoidable residual waste from household sources

In the Resources and Waste Strategy, we committed to eliminating all avoidable waste by 2050 and all avoidable plastic waste through the lifetime of the strategy (by the end of 2042).

The Clean Growth Strategy defines the aim of zero avoidable waste as eliminating all waste where it is *“technologically, environmentally and economically practicable (TEEP) to do so, [while] working to support innovation in new materials, products and processes that extend the range of materials covered by this categorisation”*. In the Resources and Waste Strategy, we also 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”* (page 7).

It is important to note that quantifying avoidable waste is challenging and subject to varying definitions, interpretations and potential methodologies.

One approach to quantifying avoidable waste is to try to assess the amount of waste which could have been avoided becoming residual given current recycling technologies and opportunities for material substitution. Residual waste here refers to waste that has not been prevented, reused or recycled. It is usually collected from households or businesses in a black bag or wheelie bin to ultimately end up at an energy recovery plant or landfill.

Residual waste is problematic, as its treatment is often the most polluting waste-management option. It also prevents the value of materials and products being retained in the economy. It is important to note that such an approach represents a subset of avoidable waste, as it does not include other forms of waste e.g. that sent for recycling which could have been prevented or avoided further up the waste hierarchy. We may look to expand this method as data becomes available.

Here, we draw on waste composition data from recent [National Waste Composition](#) studies undertaken by WRAP, which indicate proportions of materials within residual and recycling waste from household and household-like sources (household waste recycling centres, bulky collection and street sweepings). These proportions have been used to estimate national volumes of the same materials within the residual stream. It is important to note that by drawing on sample-based compositional data, final proportions and values presented here are subject to sampling error.

Using the compositional studies outlined, we have categorised waste using a tiered definition of avoidability and summed the quantity of residual waste from household and household-like sources falling into each category. This modulated approach allows for final values within each category to be combined, so that different interpretations of avoidability can be formulated as desired. The categories used are:

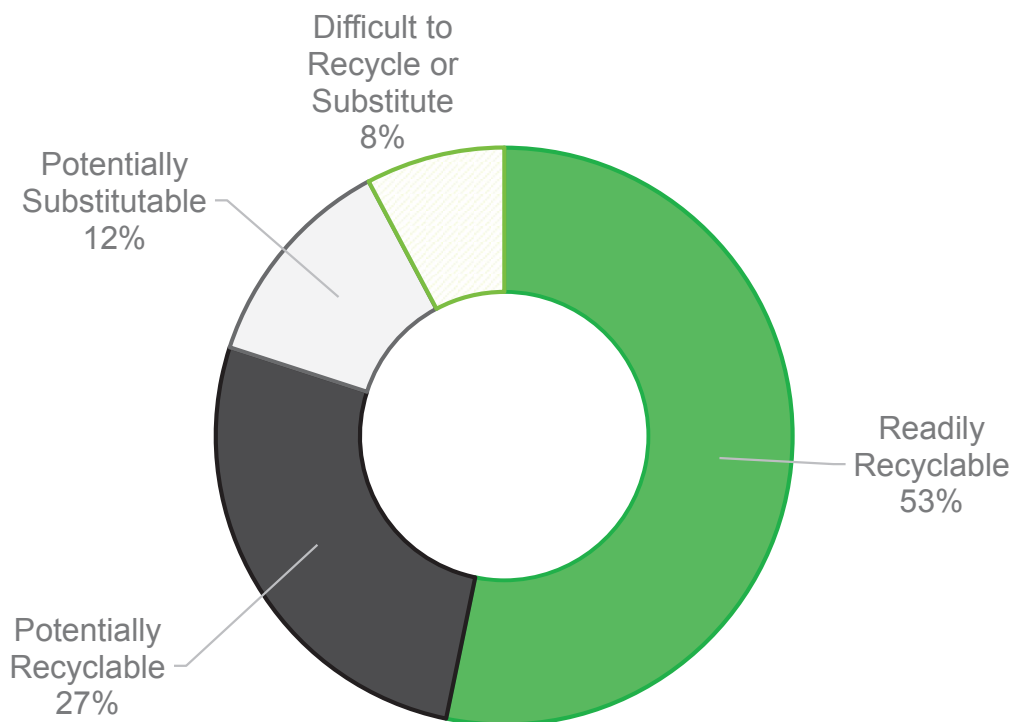
1. **Readily recyclable with current technologies** – items which shouldn't be in the residual waste stream whatsoever because they are recyclable or compostable at the kerbside or household waste recycling centres (HWRCs);³³
2. **Potentially recyclable with technologies in development** – recycling of this material either: a) happens already but not at scale due to collection or technical challenges; or b) could be possible with technological/methodological changes that are already on the market and can be readily envisaged;
3. **Potentially substitutable to a material which could be recycled** – it is hard to envisage a recycling route for these materials, but they could be substituted for something else which could be recycled;
4. **Difficult to recycle or substitute** – the material is difficult to avoid becoming residual and no feasible alternative can be envisaged without entailing substantial cost.

Where a material type falls into two categories e.g. readily recyclable or potentially recyclable, we've chosen to place it into the category closer to being readily recyclable. Please see [Appendix B](#) for how we have categorised material types for the purpose of this assessment.

The message from this assessment is that a substantial quantity of material appears to be going into the residual waste stream, where it could have at least been recycled or dealt with higher up the waste hierarchy. This is something we will continue to monitor into the future in line with our commitment to reduce avoidable waste.

³³ This doesn't necessarily mean that all local authorities will recycle these despite being recycled in some places, just that they are potentially recyclable with current technologies in use in some local authorities

Chart 13. Avoidable residual waste from household sources, England, 2017, proportion of total residual waste, by category (WP2a)

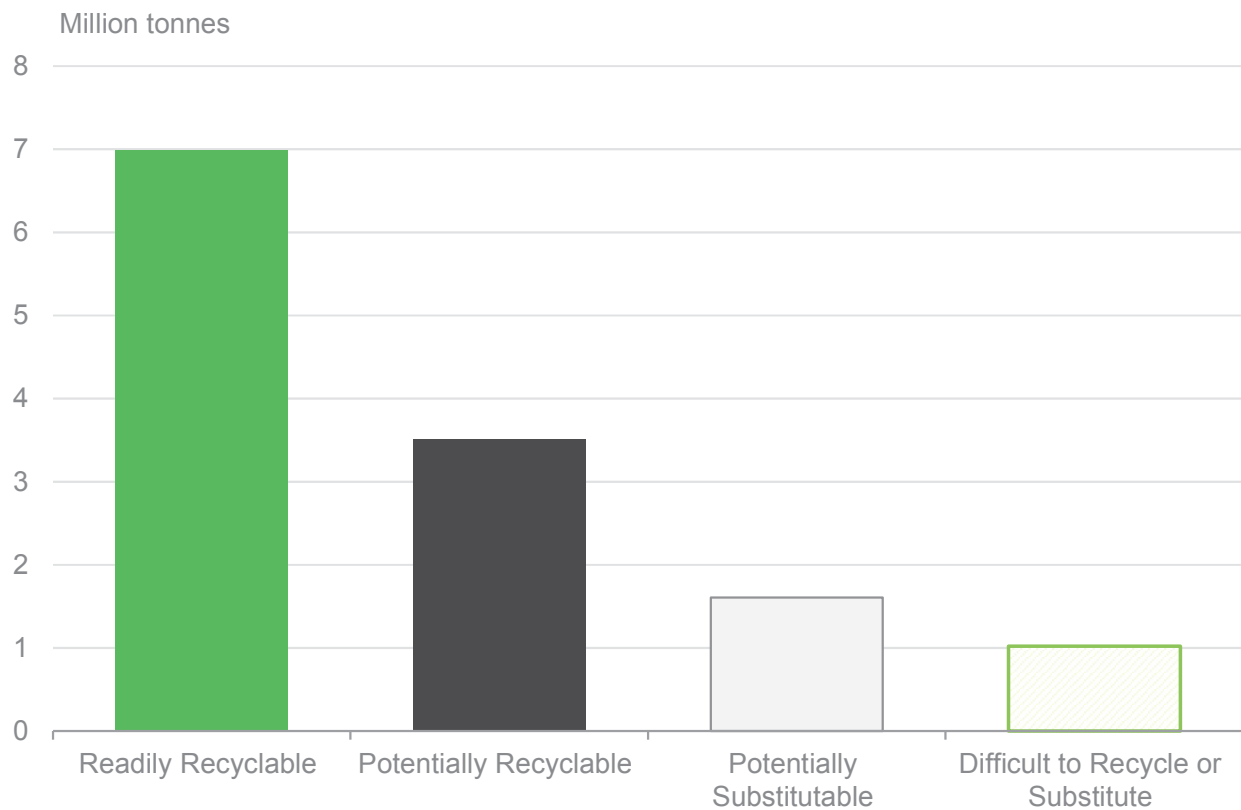


Source(s): WRAP (2020) [Quantifying the composition of municipal waste](#)

Chart 13 uses the compositional data described on page 33 and 34 to estimate the proportions of residual waste from household sources³⁴ falling into each category of 'avoidability'. Of total residual waste from household sources in England in 2017, an estimated 53% could be categorised as readily recyclable, 27% as potentially recyclable, 12% as potentially substitutable and 8% as difficult to either recycle or substitute. All figures are estimates. Further information available in [Appendix B](#).

³⁴ Including household kerbside residual collections, household waste recycling centre residual waste, bulky collections and street sweepings

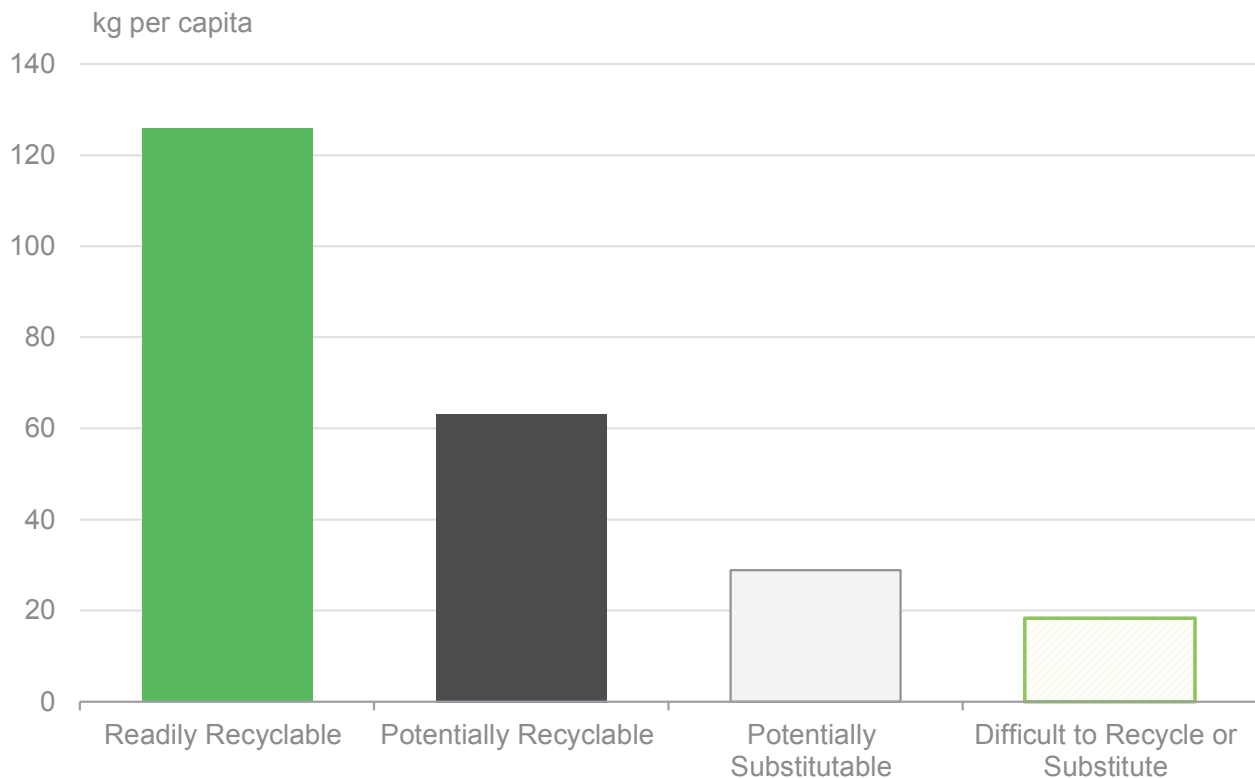
Chart 14. Avoidable residual waste from household sources, England, 2017, million tonnes (WP2b)



Source(s): WRAP (2020) [Quantifying the composition of municipal waste](#)

Of approximately 13.1 million tonnes of residual waste generated by household sources in England in 2017, around 7 million tonnes could be categorised as readily recyclable, 3.5 million tonnes as potentially recyclable, 1.6 million tonnes as potentially substitutable, and 1.0 million tonnes as difficult to recycle or substitute. All figures are estimates. Further information available in [Appendix B](#).

Chart 15. Avoidable residual waste from household sources, England, 2017, kg per Capita (WP2c)



Source(s): WRAP (2020) [Quantifying the composition of municipal waste](#)

Office for National Statistics (2019) [Estimates of the population for the UK, England and Wales, Scotland and Northern Ireland](#)

Chart 15 places the figures in chart 14 onto a per capita basis. In 2017, and of 236 kg of residual household generated on average per person in England, 126 kg could be categorised as readily recyclable, 63 kg as potentially recyclable, 29 kg as potentially substitutable and 18 kg as difficult to recycle or substitute. All figures are estimates. Further information available in [Appendix B](#).

WP2. Avoidable residual waste from household sources

Headline Indicator	WP2. Avoidable residual waste from household sources
Measure Name(s)	<p>WP2a. Avoidable residual waste from household sources, England, proportion of total residual waste</p> <p>WP2b. Avoidable residual waste from household sources, England, million tonnes</p> <p>WP2c. Avoidable residual waste from household sources, England, kg per capita</p>
Proxy Indicator and Measures (where applicable)	N/A
Time Period of Data	2017
Description of Indicator and Measures Used	Indicator provides an estimate of residual waste from household sources in England categorised according to different categories of 'avoidability' and measured: 1) as a proportion of total residual waste from household sources; 2) in tonnes: and 3) kg per capita
Desired Direction of Travel	Down
Relevant Goal in the 25 YEP	Goal 8 - minimise waste
Priority Area(s)	Reduce waste production
Relevant Legislative Targets/Commitments/Ambitions	Strategic ambition: To work towards eliminating avoidable waste of all kinds by 2050 (RWS, 2018)
National/Experimental/Official Statistics	
Geographical Scope	England
Definitions and Details of Calculation(s)	WP2a. Estimates are based on WRAP's National Household Waste composition study, a compilation of survey data collected from over 100 local authorities for the year 2017, collated and grossed up to England level to approximate the composition of residual and recycling waste from households and household-like sources (HWRCs, bulky waste collection and street cleaning). Waste is disaggregated based on material type in the study. Each material type has been categorised according to their degree of

Headline Indicator	WP2. Avoidable residual waste from household sources
	<p>'avoidability'. Avoidable residual waste here refers to residual waste generated by household sources which could have avoided entering the residual waste stream because it:</p> <ol style="list-style-type: none"> 1. <i>Is readily recyclable with current technologies</i> – items which shouldn't be in the residual stream whatsoever because they are recyclable or compostable at the kerbside or HWRC; 2. <i>Is potentially recyclable with technologies in development</i> – recycling of this material either: a) happens already but not at scale due to collection or technical challenges; or b) could be possible with technological/methodological changes that are already on the market and can be readily envisaged; or 3. <i>Could be substituted for a material which is recyclable</i> – where it is hard to envisage a recycling route for these, but the material could be substituted for something else which could be recycled. <p>Indicator calculated as avoidable residual waste, by category, divided by total residual waste, multiplied by 100 and expressed as a percentage. Please note that 'avoidable food waste' within the material list refers to food and drink that is thrown away untouched or opened/started but not finished. 'Unavoidable food waste' refers to the elements of food that is not edible under normal circumstances, such as bones, cores, peelings, and egg shells.</p> <p>WP2b. Indicator presents the proportions in WP2a on a total annual tonnage basis</p> <p>WP2c. Population for England defined in accordance with the Office for National Statistics. Further details available at data source. Indicator calculated as the ratio of avoidable residual waste from households (in mass unit) over the total population (in number).</p>

Material Category			Avoidability Classification			
1st Tier	2nd Tier	3rd Tier	Readily recyclable	Potentially recyclable	Potentially substitutable	Difficult to recycle or substitute
Food Waste		Avoidable food waste	X			
		Unavoidable food waste	X			
		Consumable liquids, fats & oils	X			
Garden waste			X			
Other organic		Pet excrement and bedding		X		
		Other organic		X		
Paper	<i>Recyclable paper</i>	Packaging paper	X			
		News, mags, brochures, catalogues & directories	X			
		Other recyclable paper	X			
	<i>Non-recyclable paper</i>	Non-recyclable paper			X	
Card		Thin card	X			
		Thick and corrugated card	X			
		Cartons	X			
		Other card		X		
Glass		Packaging glass	X			
		Non-packaging glass		X		
Ferrous metals	<i>Ferrous cans, all</i>	Ferrous drink cans	X			
		Ferrous food cans	X			
	<i>Ferrous non-cans</i>	Ferrous aerosols	X			
		Other ferrous packaging	X			
		Other ferrous non-packaging	X			
Non-ferrous metals	<i>Non-ferrous cans, all</i>	Non-ferrous drink cans	X			
		Non-ferrous food cans	X			
	<i>Non-ferrous non-cans</i>	Non-ferrous aerosols	X			
		Aluminium foil		X		
		Other non-ferrous	X			
Dense plastic	<i>Plastic bottles</i>	PET bottles	X			
		HDPE bottles	X			
		Other plastic bottles	X			
		<i>Dense plastic non-bottles</i>	Pots, tubs & trays	X		
		Other dense plastic packaging			X	
		Other dense plastic non-packaging			X	
		Polystyrene			X	
Plastic film		Carrier bags		X		
		Other packaging plastic film		X		
		Non-packaging plastic film			X	
Textiles	<i>Clothing, shoes, bags & belts</i>	Clothing		X		
		Shoes, bags & belts		X		
		<i>All non-clothing textiles</i>	Carpet & underlay			X
		Other non-clothing textiles		X		
WEEE		Large WEEE	X			

		Small WEEE		X		
Hazardous		Household batteries	X			
		Paints and varnishes				X
		Other household hazardous waste				X
Wood		Treated wood	X			
		Non-treated wood	X			
Miscellaneous combustible		Absorbent Hygiene Products		X		
		Other sanitary		X		
		Furniture		X		
		Mattresses		X		
		Other miscellaneous combustible				X
Miscellaneous non-combustible		Soil	X			
		Rubble	X			
		Plasterboard	X			
		Other miscellaneous non-combustible				X
Fines						X
Other wastes						X