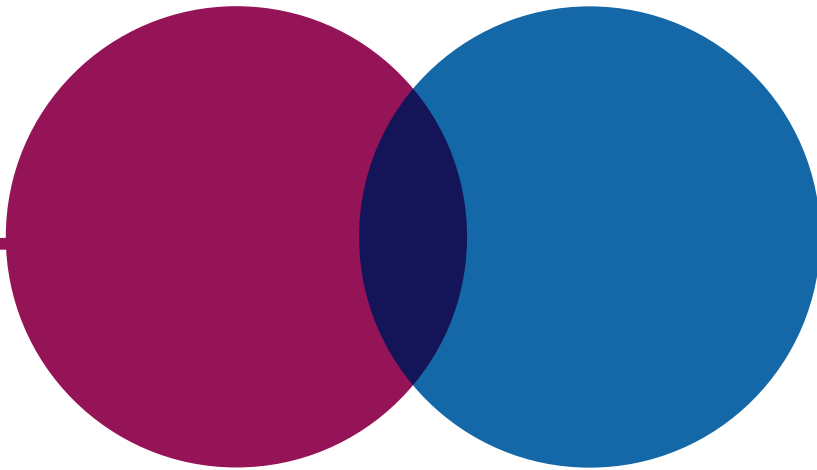




National Audit Office



REPORT

The government's resources and waste reforms for England

Department for Environment, Food & Rural Affairs

SESSION 2022-23
30 JUNE 2023
HC 1513



We are the UK's independent public spending watchdog.

We support Parliament in holding government to account and we help improve public services through our high-quality audits.

The National Audit Office (NAO) scrutinises public spending for Parliament and is independent of government and the civil service. We help Parliament hold government to account and we use our insights to help people who manage and govern public bodies improve public services.

The Comptroller and Auditor General (C&AG), Gareth Davies, is an Officer of the House of Commons and leads the NAO. We audit the financial accounts of departments and other public bodies. We also examine and report on the value for money of how public money has been spent.

In 2021, the NAO's work led to a positive financial impact through reduced costs, improved service delivery, or other benefits to citizens, of £874 million.



National Audit Office

The government's resources and waste reforms for England

Department for Environment, Food & Rural Affairs

Report by the Comptroller and Auditor General

Ordered by the House of Commons
to be printed on 28 June 2023

This report has been prepared under Section 6 of the
National Audit Act 1983 for presentation to the House
of Commons in accordance with Section 9 of the Act

Gareth Davies
Comptroller and Auditor General
National Audit Office

27 June 2023

Value for money reports

Our value for money reports examine government expenditure in order to form a judgement on whether value for money has been achieved. We also make recommendations to public bodies on how to improve public services.

The material featured in this document is subject to National Audit Office (NAO) copyright. The material may be copied or reproduced for non-commercial purposes only, namely reproduction for research, private study or for limited internal circulation within an organisation for the purpose of review.

Copying for non-commercial purposes is subject to the material being accompanied by a sufficient acknowledgement, reproduced accurately, and not being used in a misleading context. To reproduce NAO copyright material for any other use, you must contact copyright@nao.org.uk. Please tell us who you are, the organisation you represent (if any) and how and why you wish to use our material. Please include your full contact details: name, address, telephone number and email.

Please note that the material featured in this document may not be reproduced for commercial gain without the NAO's express and direct permission and that the NAO reserves its right to pursue copyright infringement proceedings against individuals or companies who reproduce material for commercial gain without our permission.

Links to external websites were valid at the time of publication of this report. The National Audit Office is not responsible for the future validity of the links.



Contents

Key facts 4

Summary 5

Part One

Government's resources
and waste ambitions 15

Part Two

The collection and
packaging reforms 34

Appendix One

Our audit approach 46

This report can be found on the National Audit Office website at www.nao.org.uk


If you need a version of this report in an alternative format for accessibility reasons, or any of the figures in a different format, contact the NAO at enquiries@nao.org.uk


The National Audit Office study team consisted of:


Katy Losse, Hedley Ayres, Annie Parsons, Alex Farnsworth and Emma Taylor, with the support of John Bell, Daniel Glendinning and Dan Varey, under the direction of Keith Davis.

For further information about the National Audit Office please contact:

National Audit Office
Press Office
157-197 Buckingham Palace Road
Victoria
London
SW1W 9SP

 020 7798 7400

 www.nao.org.uk

 @NAOorguk

Key facts

6%

percentage of UK greenhouse gas emissions from landfill, energy-from-waste facilities and other waste treatment, including treatment of wastewater, in 2021

2018

publication of government's resources and waste strategy for England

50%

required reduction in the amount of residual waste (excluding major mineral waste) produced per person in England by the end of 2042, from 2019 levels, under a legislative target set under the Environment Act 2021

June 2022

first independent review of government's flagship collection and packaging reforms, which concluded that successful delivery to time appeared unachievable

Over £1 billion

total estimated annual fees that companies that produce packaging or sell packaged goods will pay under a new extended producer responsibility scheme, which is part of government's forthcoming collection and packaging reforms. This is to cover the costs of collecting and sorting packaging waste in the UK, which, for households are currently met by local authorities

Halfway

government's estimate of how far its collection and packaging reforms will take it towards meeting its legislative target for reducing residual waste in England by 2042 if delivered successfully

Summary

1 The amount of household, commercial and industrial, construction and demolition waste we produce and what we do with it has economic and environmental consequences. Local authorities in England spent £4.9 billion on managing waste in 2021-22, £3.8 billion when accounting for income. Disposal of plastic, food and garden waste can release greenhouse gases which contribute to climate change. Disposal and treatment of waste, including wastewater, represented 6% of UK greenhouse gas emissions in 2021. Reducing waste can cut the use of valuable and finite natural resources.

2 In December 2018 government published *Our waste, our resources: a strategy for England* (the Strategy). This set out government's aim to establish a circular economy where products are used again or for longer through reuse, repair and recycling. It contained five strategic ambitions including doubling resource productivity and eliminating avoidable waste of all kinds by 2050, as well as 83 commitments in areas such as improving recycling and waste management, reducing food waste and promoting waste reduction overseas.

3 The government has commitments and requirements in this area that predate the Strategy, including through waste and recycling regulations transposed from EU directives into UK law in 2011, and under the 1990 Environmental Protection Act. In 2021 the Environment Act passed into law, under which the government has set a legislative target to halve the amount per person of residual waste (excluding mineral waste) that is sent to landfill and incineration for England by 2042 compared with 2019 levels. The need to decarbonise the waste sector became more pressing in 2019 when government passed legislation committing the UK to achieving 'net zero' greenhouse gas emissions by 2050.

4 The Department for Environment, Food & Rural Affairs (Defra) has lead responsibility for resources and waste policy within government. Responsibilities for reducing greenhouse gas emissions associated with waste are split: Defra is responsible for emissions from most waste management activities, including landfill and composting, while the Department for Energy Security & Net Zero (DESNZ) is responsible for emissions from energy-from-waste plants. DESNZ is also responsible for emissions from industry, which it expects can partly be tackled through getting more use out of materials. Local authorities are responsible for arranging collection and treatment of household waste. Defra spent more than £130 million on resources and waste work between April 2019 and March 2023, including on grants to other organisations.

5 As part of its work to deliver the strategy, Defra has developed a programme of three interrelated projects, known as the collection and packaging reforms (the reforms), which will bring about major changes to how waste is paid for and collected:

- **The extended producer responsibility for packaging scheme** will require companies that produce packaging or sell packaged products in the UK to cover the full costs of collecting and sorting household packaging waste for recycling. Defra intends that the scheme will include variable fees, depending on the recyclability of the material used.
- **The consistent collections project** will require local authorities, businesses and organisations such as schools and hospitals in England to collect food waste and dry recyclable materials (paper and card, metal, plastic and glass) separately where possible. Local authorities will also need to provide a separate garden waste collection for households.
- **The deposit return scheme** in England, Wales and Northern Ireland will place a redeemable deposit on all single-use plastic and metal drinks containers up to three litres in volume.

Scope of this report

6 This report examines whether Defra is on track to achieve its resources and waste ambitions in a way that represents value for money. It assesses:

- whether government has effective plans to achieve its resources and waste ambitions; and
- whether Defra is on track to successfully implement its main programme, the collection and packaging reforms.

The report does not cover Defra's ambition to tackle waste crime, which was subject to a separate National Audit Office (NAO) report in 2022.¹

¹ Comptroller and Auditor General, *Investigation into government's actions to combat waste crime in England*, Session 2021-22, HC1149, National Audit Office, April 2022.

Key findings

Planning for achieving government's resources and waste ambitions

7 Government did not achieve its target to recycle 50% of waste from households by 2020 but did achieve other waste targets. Between 2011-12 and 2018-19, the rate of household recycling in England plateaued, remaining between 43% and 44%. Government's 2018 Strategy was its first major statement on recycling and reducing waste since 2007. It set out that government would not introduce major changes for recycling until 2023 because of the time needed to consult, design and fund the reforms. Household recycling rates in England remained under 44% for the two years after the Strategy's publication for which there are data. The government failed to achieve its target, originating in an EU directive, for the UK to recycle 50% of waste from households by 2020. It exceeded its 2020 target to reduce the amount of biodegradable municipal waste sent to landfill, and it exceeded its 2020 target for the recovery of non-hazardous construction and demolition waste (paragraphs 1.3 and 1.7 to 1.9).

8 Four and a half years on from its 2018 Strategy, Defra has still not developed effective long-term delivery plans that set out how it will achieve its ambitions for resources and waste. Defra expects that its collection and packaging reforms will play an important role in achieving its resources and waste ambitions, but they will not be enough on their own. Its latest published analysis suggested that these reforms could take it halfway towards its legislative target for reducing the amount of residual waste that is sent to landfill and incineration by the end of 2042, and more than three-quarters of the way towards its target for increasing recycling rates by 2035. Defra is in the process of updating its analysis of the impact of the collection and packaging reforms as it finalises their scope and to reflect delays to their expected implementation. Defra has other work under way and planned, beyond the collection and packaging reforms, which it expects will contribute to achieving its resources and waste ambitions. However, its long-term delivery planning is not as well developed as we would expect. It has not yet identified a clear outline path to achieving all of its resources and waste ambitions: it does not know when decisions about new interventions need to be made by in order to ensure realistic timeframes for design, testing and implementation, nor does it know, in broad terms, what sequencing of interventions is likely to produce most benefit over the long-term (paragraphs 1.13 to 1.16 and Figure 4).

9 Without an effective long-term delivery plan it is more difficult for government and businesses to prepare for the investment and regulatory changes that will be required, and for Defra to make well-informed decisions about prioritising its work on resources and waste. The long timeframes for some of government's resources and waste ambitions mean that Defra cannot plan every step in detail now. It will need to refine its plans as circumstances change and as its understanding of what works develops. It remains important, however, to establish a clear critical path setting out what new interventions are likely to be needed, and when. That way government – both central and local – can plan the resources they will need to deliver effectively and businesses can plan for changes to, for example, their production processes. Defra has continued work on most of the 83 commitments in its resources and waste strategy since 2018, identifying 13 commitments as priorities, and putting three on hold. Without a clear outline plan it cannot be confident that it is making the most effective use of the time and money it spends on its work on resources and waste. It also runs the risk of leaving critical decisions too late, which could mean it costs more or fails to meet its ambitions. Some businesses told us that uncertainty about Defra's plans causes difficulties, for example in making the case for investment (paragraphs 1.10 to 1.12, 1.17 and 1.18).

10 Defra has not yet set out how the waste system as a whole needs to change to meet its multiple objectives and targets. Defra is working on, although it has not yet published, a waste infrastructure 'roadmap' to identify the waste capacity needed in England to 2035. Determining how the waste system needs to change is complicated by the multiple objectives and targets that government has for the waste sector. In 2022, the Office for Environmental Protection used waste as a case study to illustrate how difficult it was for them to identify all Defra's relevant targets for an environmental issue and to see how they relate to one another (paragraphs 1.4, 1.23 and 1.24).

11 While Defra publishes some useful waste metrics, it is not yet able to effectively assess overall progress on waste and resources because of weaknesses and limitations in its performance information. In November 2022 Defra carried out an assessment of progress against the commitments in its 2018 Strategy. This concluded that six of its 13 priority commitments were on track. However, it told us that this judgement was based on progress against the latest agreed timetable, rather than against its original expectations, and Defra did not have clear milestones or deadlines to inform all of these judgements. Nine out of 23 indicators in its November 2022 progress monitoring report were almost three years out of date at publication, for 2019 or earlier. Commercial and industrial waste represents around one-fifth of total waste generated but Defra does not yet have a robust methodology for determining how much of it is recycled (paragraphs 1.11, 1.25 and Figure 3).

12 Defra launched a project in 2018 to improve its data on waste through a digital waste tracking system. This system will join up and digitise the way that waste transfers are recorded. In October 2022 the Committee of Public Accounts criticised the project's slow progress as it was not yet at pilot stage four years after it was launched. In December 2022, Defra signed a contract with the IT supplier for the waste tracking service. Defra expects that the supplier will start testing a first part of the waste tracking service with a small group of users in summer 2023, building on prototype work that Defra has already carried out. In its November 2022 business case for the project, Defra anticipated that the full waste tracking system will be built by April 2025. We have not carried out a detailed review of the waste tracking project, but previous NAO work has found that a key challenge for large digital programmes is understanding the level of risk associated with a project's aims and ambitions. We have found that departments have often taken longer to deliver programmes than originally scheduled, due to insufficient or unrealistic scoping and planning (paragraphs 1.26 to 1.28).

13 Defra is not in a position to set a target for tackling waste at source, which creates risks that this is not getting the priority that it merits. Government considers that most of the damage to the environment from waste could be avoided at the design and production stages by considering the materials used in production and the ease with which products can be reused or repaired. Defra also considers that improving resource efficiency (the use that is drawn from raw materials before they are discarded) could help businesses become resilient to critical raw materials shortages. Defra considered setting a long-term statutory target for resource efficiency in 2022. It decided not to because it did not yet have a reliable way of measuring such a target. Defra also recognised it had more to do to build its understanding of the impacts and risks of potential policy interventions to ensure that a target in this area would be achievable. Without these foundations in place, resource efficiency may receive less attention than tackling residual waste, which does have a measurable statutory target. Defra has taken action since 2018 to improve waste prevention and resource efficiency, including through a £13.9 million grant scheme for resource efficiency projects, and by introducing bans on certain single-use plastic items. However, the lack of an effective long-term plan means that Defra cannot show whether it is doing enough on waste prevention and resource efficiency to put it on track to achieve its overall ambitions in the most cost-effective way. Many of the stakeholders we spoke to from the waste sector, local authorities and environmental groups told us they were concerned that government had not given waste prevention and re-use sufficient priority. Defra issued a draft plan for waste prevention in England for consultation in March 2021. It has not yet published a final version, despite anticipating that it would do so by mid-September 2021 (within three months after the consultation closed). In January 2023, Defra re-committed to publish a new programme for minimising waste and increasing resource efficiency in England (paragraphs 1.2, 1.6, 1.19 to 1.22).

The collection and packaging reforms

14 Defra did not do enough to put in place essential aspects of programme management when it set up the collection and packaging reforms programme.

Between 2019 and 2021, Defra's preparations for delivering the reforms included consulting on the three projects, supporting the production of the Environment Bill, producing a high-level delivery plan and establishing a programme board. In both June and September 2022, however, the Infrastructure and Projects Authority (IPA) carried out an assurance review of the programme and concluded that successful delivery of the programme to time appeared unachievable. By this point, four years after committing to introduce the collection and packaging reforms, Defra had not secured the resources and expertise that would be necessary to succeed within the agreed timeframes. Defra did not have detailed delivery plans that reflected the scale and complexity of the three projects (extended producer responsibility, consistent collections, and the deposit return scheme). Despite the dependencies between the three projects, it was not managing the collection and packaging reforms as an integrated programme. Defra's approach to realising the benefits of the programme was under-developed (paragraphs 2.8, 2.13 to 2.16 and 2.22).

15 These weaknesses in set-up, as well as factors outside Defra's control, have led to delays. Defra has delayed the introduction of an extended producer responsibility scheme from 2023 to 2024, and the consistent collections project and deposit return scheme from 2023 to 2025. Defra told us that these delays are partly because the one-year Spending Reviews in 2019 and 2020 limited its ability to plan the reforms. Progress was also affected by the COVID-19 pandemic, as Defra paused some of its engagement with stakeholders during 2020 (paragraphs 2.6 and 2.15).

16 Defra has taken steps to place the programme on a firmer footing, but some key elements of effective programme management are still not in place. Defra has implemented or is working towards implementing the IPA's recommendations. It has increased the number of staff delivering the programme and has brought in consultants to support the planning of the programme. However, it still has 22 vacancies in its programme team against a required headcount of 151. Defra is developing detailed delivery plans for each of the three projects within the programme and is producing a programme-wide business case, which should improve its understanding of the interdependencies between the projects. It has also begun to develop plans for ensuring that the programme's benefits are delivered, but this work remains at an early stage (paragraphs 2.8, 2.13, 2.14, 2.21 and 2.22).

17 Defra has taken action to mitigate the risk of unsuccessful delivery but the risk of not delivering to the latest timetable is still high. Time pressures led to Defra deciding to implement the extended producer responsibility scheme in phases rather than launching the full scheme in one go. When it made the decision to delay the introduction of this scheme to 2024, it expected that the scheme administrator – a new organisation that Defra plans to establish within the public sector to administer payments from companies to local authorities – would be fully operational in time for the start of that financial year (April 2024). As part of managing risk, Defra has since delayed this to October 2024 to give it more time to design how the organisation will work, and to recruit the specialist skills and the staff it will need. However, this is still an ambitious timetable. Defra has around 15 months from the publication of this report to create an entirely new organisation, appoint its senior staff, fully staff it and design and roll out any training and systems they need. There is little contingency in the timetable because the scheme administrator will need to process payments as soon as it is set up for the 2024-25 financial year. Defra told us that it intends to set review points when it will assess progress and decide whether to proceed as planned or to make a change to the programme's schedule or scope. It has also started a project to identify the main barriers and challenges to successful delivery that will require ministers' involvement to resolve (paragraphs 2.17 to 2.19).

18 Delays and a lack of clarity about Defra's plans have added to the challenge of achieving the expected benefits from the reforms. The success of the collection and packaging reforms depends on businesses and consumers changing their behaviour by producing less, and recycling more, waste. There are significant challenges to achieving these benefits. For example:

- a core objective for the extended producer responsibility scheme is to incentivise producers and retailers to use fewer and more easily recyclable materials in their packaging. However, some businesses we spoke to told us that lack of clarity about Defra's plans has discouraged them from investing in changes to products and processes in advance of the scheme coming into force; and
- local authorities do not yet know how payments through the extended producer responsibility scheme will affect their overall funding. This could mean that many local authorities start the process of procuring new lorries and bins at the same time, once the funding implications are clear. This could put pressure on supply chains and mean it takes longer than Defra expects for all local authorities to collect waste as required (paragraphs 2.3, 2.20 and Figure 8).

19 Defra still does not have a full understanding of the nature and extent of the changes that will be required to realise the benefits it expects from the reforms.

The benefits of the collection and packaging reforms, such as improving recycling, minimising waste and reducing greenhouse gas emissions, require businesses, consumers and households to change their behaviour substantially. Defra has not yet developed a full understanding of the nature and extent of the behaviour change that will be required; nor has it produced a plan for how it will ensure that the benefits of the programme are realised. Without this there are risks that it loses focus on benefits in the run-up to launching the schemes, and that the reforms fail to achieve the levels of recycling, waste reduction and greenhouse gas emissions savings that are needed. Defra has plans to evaluate and monitor progress on the reforms, including to collect data on performance from one year after implementation of each project. Defra will need to use these data to develop an early understanding of whether the reforms are prompting the changes it expects and take swift action if not (paragraphs 2.10, 2.11, 2.20 and 2.22).

20 Defra has much more to do to improve businesses' confidence in the reforms.

As part of ensuring that the reforms are a success Defra must build strong relationships with the businesses affected. This includes waste management companies who need to invest in the necessary new recycling infrastructure, as well as retailers and other businesses who will be taking on the cost of managing household packaging waste. Some businesses we spoke to told us that Defra's communication with them had been patchy: businesses' views were taken into account during consultation on the reforms, but they felt unclear about the detailed delivery plans, as well as being asked to respond to requests from Defra in very little time. Since the end of 2022, Defra has developed an improved stakeholder management approach but the fact it has not yet developed detailed delivery plans to share with stakeholders makes the task of improving relations more difficult (paragraphs 2.20, 2.21 and Figure 8).

21 There are inherent uncertainties about the scale of the benefits of the deposit return scheme. The impact assessment for the deposit return scheme showed that most (more than 90%) of the benefits that Defra expects are based on an estimate of the value to society of reducing litter, and this is inherently difficult to determine. In addition, the appraisal of the scheme assumes that it will result in an 85% reduction in litter from drinks containers. Defra was planning to use Scotland's deposit return scheme as an opportunity to learn lessons, but the launch of this has now been delayed until at least October 2025, which is when Defra plans to launch its scheme. While there are time and cost implications, it is good practice to pilot projects before committing to significant investment, particularly where the scale of the planned benefits is uncertain. Defra has no current plans to test the scheme through piloting (paragraphs 2.10 to 2.12).

Conclusion

22 In December 2018 government set strategic long-term ambitions to reduce waste and make more efficient use of raw materials. Four and half years on, Defra is delivering some projects and planning others, but it still does not know what it needs to do to achieve its ambitions over the long term. It cannot plan every step in detail over such long time-frames. However, it should know, in outline, what new policy interventions may be needed, their respective contributions, and when the main decision points will be. The UK missed its 2020 recycling target after nearly a decade of stalled recycling rates. The main reforms it has taken forward so far, on collection and packaging, have been delayed. Defra took too long to put in place essential elements of good programme management, and some elements are still lacking. A lack of clarity has made it hard for businesses and local authorities to prepare for the changes they will need to make.

23 Defra must now establish firmer foundations for its work on resources and waste. It should develop a coherent approach to securing its ambitions across the waste management sector, rather than relying primarily on a project-by-project perspective. In addition, it needs to address weaknesses in the reforms that are in progress, and build on these lessons to set up future waste projects and programmes more effectively. If Defra takes these steps it will be in a much stronger position to ensure that government achieves its ambitions, and the considerable benefits to taxpayers, consumers, businesses and the environment are secured.

Recommendations

24 Defra should:

a **develop a clear outline path to achieving all of its resources and waste ambitions in a way that gives it a clear overview of:**

- when key decisions need to be made by in order to ensure realistic timeframes for the design, testing and implementation of new policies;
- what sequencing of interventions is likely to produce most benefit; and
- how the waste sector as a whole needs to change to meet government's multiple objectives and targets;

- b determine**, with HM Treasury and DESNZ's support:
 - **the likely cost implications of different options**, in broad terms, for businesses, consumers and the taxpayer;
 - **where the main dependencies between policy interventions are likely to be**; and
 - **how government will manage common or overarching success factors** such as business and public engagement;
- c engage external stakeholders fully and promptly in its outline plans for future resources and waste interventions to give them as much clarity as possible about the direction of travel**, so that companies have confidence to invest in the changes to business models and waste infrastructure capacity that are needed;
- d ensure that it develops and maintains a good understanding of the risks associated with collecting sufficiently meaningful, good-quality, and consistent data through digital waste-tracking**;
- e carry out a review of the deposit return scheme**, including:
 - updating its evidence on the likely take-up of the deposit return scheme, and the proposed benefits, including the impact of the scheme on amounts of litter from drinks containers, and drawing on any evidence available from pilots carried out in Scotland; and
 - deciding whether, based on that review together with evidence from wider international experience, and an assessment of the impact on timetables and costs, a pilot scheme would be beneficial to protect value for money.
- f improve its approach to managing the risks associated with the collection and packaging reforms by establishing clear criteria for its review points**. This will help Defra make informed decisions about whether to go ahead with the schemes, based on a clear view of the risks to delivery and the strength of contingency plans; and
- g carry out a lessons-learned exercise in advance of the formal evaluation of the reforms to determine practical steps that could be taken to help avoid the challenges it has faced recurring in its future resources and waste work**. This should include an analysis of how Defra will ensure it improves its approach to:
 - setting programmes up well at the outset with a clear programme vision, and integrated delivery plans; and
 - securing in good time the resources and expertise it will require to deliver the programme to the agreed timeframes.

Part One

Government's resources and waste ambitions

1.1 This part of the report examines whether government has effective plans to achieve its resources and waste ambitions. It examines:

- government's resources and waste ambitions and how these have evolved over time;
- performance against the UK's 2020 waste targets;
- progress in implementing the new measures in its 2018 resources and waste strategy;
- forecast performance against government's resources and waste ambitions;
- the Department for Environment, Food & Rural Affairs' (Defra's) progress in establishing effective long-term plans for what more needs to happen to deliver on its resources and waste ambitions; and
- Defra's approach to monitoring and evaluating overall progress.

How government's resources and waste ambitions have evolved over time

1.2 The amount of household, commercial and industrial, construction and demolition waste we produce and what we do with it has economic and environmental consequences. Waste is costly to process and manage, with local authorities in England spending £4.9 billion on managing waste in 2021-22, £3.8 billion when accounting for income.² Government considers that by minimising waste and improving resource efficiency, producers will make savings on the cost of materials, and become more resilient to critical raw materials shortages and less vulnerable to price volatility. Waste that is littered or mismanaged can harm wildlife and pollute rivers and oceans. Disposing of waste through landfill, incineration and energy-from-waste facilities, and wastewater treatment produced 6% of UK greenhouse gas emissions in 2021. Reducing waste can cut the use of costly and finite natural resources.

² Department for Levelling Up, Housing & Communities, *National statistics Local authority revenue expenditure and financing England: 2021 to 2022 individual local authority data – outturn*, March 2023.

1.3 In December 2018, government published *Our waste, our resources: a strategy for England* (the Strategy).³ The Strategy was the government's first comprehensive statement of its ambition to reduce waste and improve resource productivity since 2007. It set out government's aim to establish a circular economy, where products are used again or for longer through reuse, repair and recycling. This reduces the use of precious raw materials and reduces carbon emissions. It contained five strategic ambitions including doubling resource productivity and eliminating avoidable waste of all kinds by 2050, as well as 83 commitments (plus 14 sub-commitments) in areas such as improving recycling and waste management, reducing food waste, and promoting waste reduction overseas (**Figure 1** on pages 18 and 19).

1.4 Government has resources and waste ambitions and requirements that predate the Strategy, including under waste and recycling regulations transposed from EU directives into UK law in 2011, and under the 1990 Environmental Protection Act. Government has also developed and added to its waste and resources ambitions since publishing the Strategy. In 2021 the Environment Act passed into law, under which the government has set a legislative target to halve the amount of residual waste (excluding mineral waste) that is sent to landfill and incineration per person in England by the end of 2042 compared with 2019 levels.⁴ The need to decarbonise the waste sector became more pressing in 2019 when government passed legislation committing the UK to achieving 'net zero' greenhouse gas emissions by 2050. In 2022, the Office for Environmental Protection used waste as a case study to illustrate how difficult it was for it to identify all Defra's relevant targets for an environmental issue and to see how they relate to one another.

1.5 Defra is the government department responsible for resources and waste policy. Responsibilities for reducing greenhouse gas emissions associated with waste are split: Defra is responsible for emissions from most waste management activities, including landfill and composting; the Department for Energy Security & Net Zero (DESNZ) is responsible for emissions from energy-from-waste plants. DESNZ is also responsible for greenhouse gas emissions from industry, which it expects can partly be tackled through improved resource efficiency. Local authorities are responsible for arranging collection and treatment of household waste.

³ Department for Environment, Food & Rural Affairs, *Our waste, our resource: a strategy for England*, December 2018. Available at: www.gov.uk/government/publications/resources-and-waste-strategy-for-england

⁴ The Environment Act target on waste requires the total mass of residual waste (excluding major mineral waste) in a calendar year does not exceed 287 kg per head of population in England by the end of 2042. This is equivalent to a 50% reduction from 2019 levels.

1.6 In total Defra spent more than £130 million on resources and waste work over the four full financial years since the Strategy's publication, from April 2019 to March 2023. The largest areas of spend include:

- more than £31 million on developing its flagship collection and packaging reforms (the reforms);⁵
- £34 million of funding to a non-governmental organisation, WRAP, to support its work on issues such as minimising food waste, reducing plastic pollution and creating a sustainable textiles sector;
- £13.9 million on a Resource Action Fund, which provided grants to organisations in England to support new projects aimed at resource efficiency; and
- £2.3 million on a project to develop digital tracking of waste.

Performance against 2020 waste targets

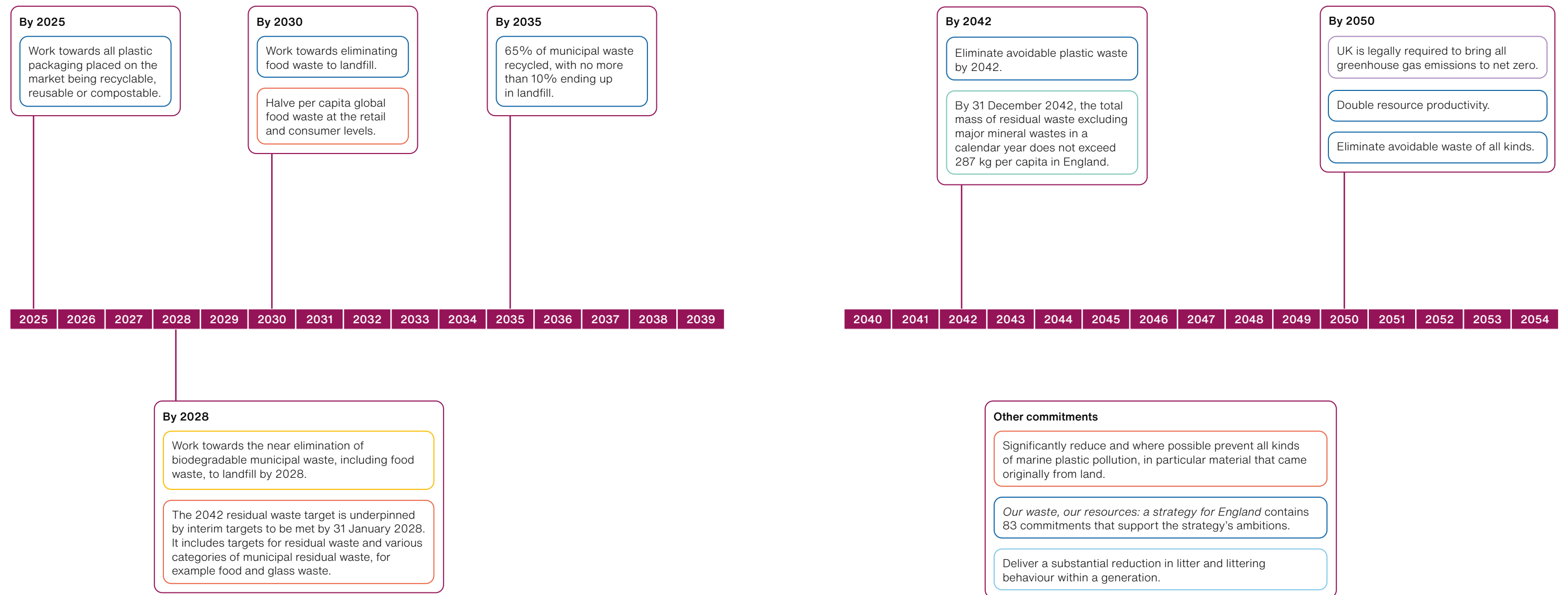
1.7 The 2018 Strategy came too late to put England on the path to meet government's recycling target, carried from a 2008 EU directive, for the UK to recycle 50% of waste from households by 2020. Government missed this UK target, with England reaching 44% of waste from households recycled in 2020. Data showing performance against this target goes back to 2010, while data on household waste recycling rates at a local level goes back further.⁶ This data shows that between 2000-01 and 2010-11, household waste recycling rates in England increased from 11% to 42%. This followed the introduction of the landfill tax in 1996 and the requirement on local authorities to collect at least two types of recyclable material, introduced in the Household Waste Recycling Act 2003. However, between 2011-12 and 2018-19, household waste recycling rates in England plateaued, remaining between 43% and 44%, and this trend has continued over the two subsequent years for which there are data (**Figure 2** on page 20). The 2018 Strategy did not anticipate that government would introduce major changes for recycling until 2023 because of the time needed to consult, design and fund the reforms.

⁵ Defra recorded spend of £31.2 million on the collection and packaging reforms between 2021 and 2023. Total spend on these reforms will be higher than this because of work carried out over 2019 to 2021 but Defra does not know by how much because it did not separately record spend data in this way before 2021.

⁶ National recycling statistics for waste from households used to report against the 2020 recycling target includes only waste collected directly from households. Data from government's local authority collected waste statistics, measuring household waste also includes, for example, waste from street bins.

Figure 1
Government ambitions and targets for resources and waste between 2025 and 2050

The Government's objectives for its work on resources and waste have grown over time



These targets are derived from:

- 2017 Litter strategy for England
- 2018 *Our waste, our resources: a strategy for England*
- 2021 Net Zero strategy
- 2023 Environment Improvement Plan
- Environment Act 2021
- Climate Change Act 2008 (2050 Target Amendment)

Note

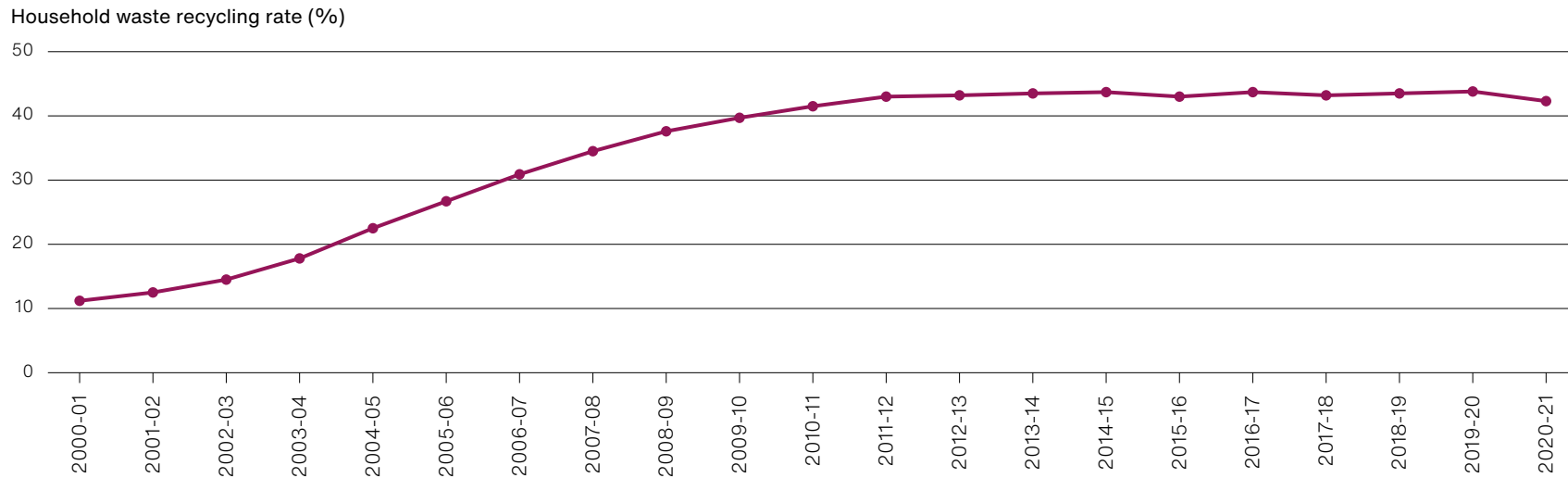
1 This gives an overview of government's main strategic ambitions.

Source: National Audit Office analysis of government's published documents

Figure 2

Household waste recycling rates in England 2000-01 to 2020-21

Household waste recycling rates in England have stalled since 2011-12



Note

1 National recycling statistics for waste from households used to report against the 2020 recycling target includes only waste collected directly from households. Data from government's local authority collected waste statistics measuring household waste also includes, for example, waste from street bins. In this table we have used data from government's local authority collected waste statistics because the data is available over a longer time period than the national recycling statistics for waste.

Source: National Audit Office analysis of local authority collected waste statistics

1.8 The National Infrastructure Commission reported, based on Organisation for Economic Co-operation and Development (OECD) data, that in 2018 the United Kingdom, with a recycling rate of waste from households of 44%, was lagging behind the best-performing comparable countries such as Germany (67%), South Korea (65%) and the Netherlands (56%).⁷ Household waste recycling rates vary across local authorities in England, ranging from 17% to 65% in 2018-19.

1.9 Government did, however, exceed its target, set in 2011, to reduce the amount of biodegradable municipal waste sent to landfill across the UK, with 4.9 million tonnes of biodegradable municipal waste sent to landfill in England in 2020 against a target of less than 10.2 million tonnes by 2020. It also exceeded its target for improving the recovery of non-hazardous construction and demolition waste, with 93% of this waste recovered in England in 2020, against a target for 70% of non-hazardous construction and demolition waste to be recovered by 2020.

Progress in implementing new measures

1.10 In November 2022 Defra carried out a review of its progress on delivering the 83 commitments it made in its Strategy. It had identified 13 of these commitments as 'Tier One' priorities and assessed that of these:

- one commitment was complete: the introduction of a tax on plastic packaging, which came into force in April 2022;
- one commitment was subject to a small delay: the development of a network of 'resource efficiency clusters' to bring organisations together to improve the way resources are used; and
- five were significantly delayed: all of which relate to the collection and packaging reforms (see Part Two).

1.11 Defra judged that six of the 13 priority commitments were on track (**Figure 3** overleaf). However, it told us that this judgement was based on progress against the latest agreed timetable, rather than against its original expectations, and Defra did not have clear milestones or deadlines to inform all of these judgements.

⁷ Data on waste and recycling are challenging to compare because some countries count some forms of waste as recycling that others do not. A report by Eunomia, for example, suggested that the recycling rates of Germany, South Korea and the Netherlands would fall substantially, although would still exceed the UK's rate, if certain categories of waste were stripped out of its statistics. See: Eunomia, *Recycling – who really leads the world? Identifying the world's best municipal waste recyclers*, March 2017. Available at: www.eunomia.co.uk/reports-tools/recycling-who-really-leads-the-world/

Figure 3

Department for Environment, Food & Rural Affairs' (Defra's) assessment of progress on its priority commitments in the resources and waste strategy as of November 2022

Defra judged that six of its 13 priority commitments were on track, with one complete

Defra's priority commitments	Defra's November 2022 assessment of progress
Introduce tax on plastic packaging	Complete
Two commitments relating to mandating and developing digital solutions to recording waste movements and sharing data	On track ⁴
Consult on business reporting food surplus and waste annually and seek powers to implement food waste targets and surplus food redistribution	On track ³
Move away from a focus of monitoring on waste to a focus on resources	On track
Reform waste regulations to ensure waste is managed by genuine companies, and businesses are accountable for their waste when passed from one company to another	On track
Equip the regulator with powers to pursue and disrupt organised crime	On track ⁵
Develop plans to bring businesses together to share knowledge on resource efficiency to cut resource use and waste	Delayed
Five commitments relating to the collection and packaging reforms	Significantly delayed

Notes

- 1 November 2022 is the latest data Defra has available for progress against its commitments. Defra also has 26 medium priority 'Tier Two' commitments and 44 low priority 'Tier Three' commitments. Of the medium priority commitments Defra has assessed 5 as complete, 12 on track, 7 delayed or on hold, and 2 significantly delayed. Of the low priority commitments, 10 are complete, 25 on track, 5 delayed or on hold, and 4 significantly delayed.
- 2 The five commitments relating to the collection and packaging reforms are introduce: extended producer responsibility for packaging; review packaging legislation and encourage design for greater reuse, remanufacturing and recycling; ensure consistent dry recyclables collection from all households and businesses; introduce a deposit return scheme for drinks containers subject to consultation; and ensure all households and business have a weekly separate food waste collection.
- 3 Defra's commitment to consult on business reporting of food surplus and waste was delayed against its original schedule. In September 2022, Defra closed its consultation on improved reporting of food waste by large food businesses in England.
- 4 In October 2022 the Committee of Public Accounts criticised the project's slow progress.
- 5 Defra has since issued the regulator with new powers to pursue and disrupt organised crime.

Source: National Audit Office review of Department for Environment, Food & Rural Affairs November 2022 progress report

1.12 Progress against other commitments also shows a mixed picture, with Defra reporting 52 of its medium and low priority commitments as complete or on track, with a further 15 delayed or significantly delayed, and three on hold (see Note 1 to Figure 3). This wider work has involved a range of activities. For example, Defra has assessed options for introducing additional extended producer responsibility schemes for textiles, vehicle tyres and furniture waste, and introduced grant schemes to reduce food waste and promote resource efficiency. It introduced a ban on certain plastic products in October 2020 (plastic straws, stirrers and cotton buds) and has prepared draft secondary legislation which, subject to the agreement of the House of Commons, would ban a number of other single-use plastic items (including single-use plastic plates, trays and bowls). It also supported WRAP to take forward voluntary agreements on food, plastic and textile waste. We examined progress on these voluntary agreements as part of this study, although we did not carry out an audit of Defra's approach. Our research showed that progress has been made in some areas, but also highlighted challenges for the success of these agreements:

- Signatories to the food waste voluntary agreement that provided multi-year data reported a reduction in edible food waste in 2022 compared with their individual baselines, which range from 2015 to 2020. However, total food waste (including inedible parts) increased.
- Signatories to the plastics voluntary agreement have reduced the number of problematic plastic items (such as single-use plastic cutlery and cotton buds with plastic stems) from sale by 84% since 2018 and WRAP considers that its members are on target to eliminate these completely by 2025. However, delays to the collection and packaging reforms and the broader retail environment mean that signatories will struggle to meet their targets on the proportion of plastic packaging that is recyclable.
- The number of actions taken by signatories to the textiles voluntary agreement to reduce their carbon and water footprints have increased and led to reductions. However, these actions by signatories to the agreement were insufficient to counteract the growth in textiles placed on the market in 2021.

Forecast performance against ambitions

1.13 Defra expects the reforms to make a substantial contribution towards meeting its overall resources and waste ambitions, although they will not be enough on their own (**Figure 4** on pages 26 to 28). For example, its latest published analysis of the potential impact of the reforms on residual waste is that they could reduce residual waste per person, excluding major mineral wastes, by 25% by 2042 relative to 2019 levels.⁸ This would represent half of the reductions needed to meet its legislative target for reducing residual waste by 2042.⁹ Its latest published analysis of the potential impact of the reforms on recycling is that they could increase municipal recycling rates in England to 61% by 2032. This would represent more than three-quarters of the improvement it needs to bring recycling rates from current levels to its target of a 65% recycling rate in England by 2035. It is in the process of updating its analysis of the impact of the reforms as it finalises their scope and to reflect delays to their expected implementation.

Establishing effective long-term plans

1.14 Business and environmental groups welcomed the 2018 Strategy, for example for setting a vision and direction of travel. However, some raised concerns that the commitments in it did not amount to a clear plan for action. Defra has since developed a number of documents that set out or start to explore plans for further interventions, building on the proposals in its 2018 Strategy. In January 2023, Defra published an Environmental Improvement Plan, a five-year delivery plan, which includes a section on waste and resources. This included a commitment to publish a plan for minimising waste and maximising resources. It is also working on a waste infrastructure plan and is developing a waste decarbonisation plan for publication in summer 2023.

1.15 Defra's long-term delivery planning is not as well developed as we would expect. While it has established illustrative scenarios of how some of its strategic targets could potentially be met, it has not yet taken the next step of determining when decisions about the actual mix of interventions to be taken need to be made by (see Figure 4). In developing an illustrative pathway for meeting its residual waste target, for example, Defra used historical data on the impact of introducing the landfill tax to test whether similar price-based levers could deliver the required residual waste reductions by the end of 2042. It explicitly stated that this was an illustration of feasibility and not a proposal for how the target could best be reached in practice, in recognition that there are a range of other levers that could be used to reduce residual waste.

8 This analysis was published in April 2022, as part of an evidence report on resource efficiency and waste reduction targets.

9 This legislative target requires that the mass of residual waste for the calendar year 2042 does not exceed 287 kg per head of population in England (equivalent to a 50% reduction from 2019 levels).

1.16 This means that while it has a menu of different options for how it will develop its work on resources and waste, it does not yet have long-term delivery plans that identify a clear outline path to reaching its ambitions. It does not know:

- how quickly it needs to develop new interventions to allow enough time for design, consultation, testing and implementation;
- what timing and sequencing of interventions is likely to produce the greatest benefit;
- how it will manage common and overarching risks and success factors such as business engagement; or
- how the waste system as a whole is likely to need to change (paragraphs 1.23 and 1.24).

1.17 Delivering government's resources and waste ambitions to develop a circular economy, increase recycling rates and reduce resource use is a significant, long-term challenge. It will require a fundamental change in the behaviour of businesses and individuals. Without a clear outline path for how government expects to achieve its ambitions it will be more difficult for government and local authorities to plan the resources they will need to deliver effectively, and for businesses to plan for any changes to their production processes, investment plans and business models. The lack of a clear outline plan also means Defra cannot be confident that it is making the most effective use of the time and money it spends on its work on resources and waste. It runs the risk of leaving critical decisions too late, which could mean it costs more or fails to meet its ambitions. Some businesses told us that uncertainty about Defra's long-term plans causes difficulties. For example, in making the case for investment in changes to waste facilities or in achieving system-wide change.

1.18 With such complex, long-term and wide-ranging ambitions Defra will not be able to anticipate or plan every step in detail now. It needs to retain an ability to adjust course as circumstances change and as its understanding of what works develops. However, the fact that the plan may need to change and develop does not negate the need for an initial plan. We have highlighted the importance of long-term planning for achieving transformational changes in society in recent National Audit Office (NAO) reports.¹⁰

¹⁰ Comptroller and Auditor General, *Decarbonising the power sector*, Session 2022-23, HC 1121, National Audit Office, March 2023 and Comptroller and Auditor General, *Achieving government's long-term environmental goals*, Session 2019–2021, HC 958, National Audit Office, November 2020.

Figure 4

The maturity of Defra's long-term delivery planning for its resources and waste ambitions¹

The Department for Environment, Food & Rural Affairs (Defra) expects that its collection and packaging reforms will make a substantial contribution towards meeting its overall resources and waste ambitions, however they will not be enough on their own

Ambition	Examples of relevant work underway expected to contribute to the ambition	Defra's latest forecast of performance against the ambition	Maturity of long-term delivery planning	
			Illustrative scenario for how the ambition could be met?	Outline of when key decisions need to be made by to make achieving the ambition feasible?
Eliminate avoidable waste of all kinds by 2050	<p>Collection and packaging reforms²</p> <p>Ban of certain single-use plastic items⁴</p> <p>WRAP's voluntary agreements on food, plastic and textile waste</p>	Not known	No	No
Decarbonise waste and improve resource efficiency in line with net zero	<p>Collection and packaging reforms²</p> <p>Ban of certain single-use plastic items⁴</p> <p>WRAP's voluntary agreements on food, plastic and textile waste</p> <p>Call for evidence on expanding the UK emissions trading scheme to include waste incineration and energy-from-waste facilities by the mid- to late 2020s (issued March 2022)</p> <p>Consultation on requiring almost all new-build or substantially refurbished energy-from-waste plants to have a viable route to decarbonisation (to come into force from 1 July 2024)</p> <p>A funding route that waste management carbon capture and storage projects can apply for</p> <p>A research project to understand which resource efficiency measures will need to be implemented in different industrial sectors to deliver improvements</p>	<p>Defra expects the collection and packaging reforms could contribute:</p> <ul style="list-style-type: none"> 72% of the greenhouse gas emissions savings required for the waste sector, excluding energy-from-waste, in England over 2023 to 2033 (Carbon Budgets 4 and 5)⁷ (under review)⁶ 81% of the greenhouse gas emissions savings required for the waste sector, excluding energy-from-waste, in England over 2033 to 2037 (Carbon Budget 6)⁷ (under review)⁶ 	Quantified in outline to 2037	Under review

Figure 4 *continued*

The maturity of government's long-term delivery planning for its resources and waste ambitions¹

Ambition	Examples of relevant work underway expected to contribute to the ambition	Defra's latest forecast of performance against the ambition	Maturity of long-term delivery planning	
			Illustrative scenario for how the ambition could be met?	Outline of when key decisions need to be made by to make achieving the ambition feasible?
Double resource productivity by 2050	Collection and packaging reforms ²	Achievable depending on the success of future government interventions ³	Yes ³	No
By the end of 2042 the total mass of residual waste (excluding major mineral waste) does not exceed 287kg per head of population in England (a legal requirement under the Environment Act 2021)	Collection and packaging reforms ²	Defra expects the collection and packaging reforms could lead to a 25% reduction by 2042, halfway towards the target (under review) ⁶	Yes	No
Eliminate avoidable plastic waste by end of 2042	Collection and packaging reforms ² Ban of certain single-use plastic items ⁴ Anticipated reform of regulations for waste electrical and electronic equipment UK plastics pact ⁵	Not known	At an early stage	No
65% of municipal waste recycled by 2035, with no more than 10% ending up in landfill	Collection and packaging reforms ²	Defra expects the collection and packaging reforms could lead to a 61% municipal recycling rate by 2032, around three-quarters of improvements needed to meet the target (under review) ⁶	No	No
Work towards the near elimination of biodegradable municipal waste to landfill from 2028	Collection and packaging reforms ²	Under review as part of a call for evidence requesting views, data and evidence on the near elimination of biodegradable municipal waste to landfill from 2028 (issued May 2023)		

Figure 4 *continued*The maturity of government's long-term delivery planning for its resources and waste ambitions¹**Notes**

- 1 This figure covers most of Defra's main resources and waste ambitions, but it is not a comprehensive list of all of its resources and waste objectives and targets. It includes illustrative examples of relevant work underway that Defra expects to contribute to the ambition, but it is not a comprehensive list of all the work underway on these issues.
- 2 The collection and packaging reforms involve three projects: extended producer responsibility for packaging, deposit return scheme and consistent collections. Defra expects these reforms to lead to increased recycling, reduced waste, and reduced greenhouse gas emissions, for example, because:
 - under extended producer responsibility, obligated companies that produce packaging or sell packaged goods will pay a fee intended to cover the full costs of collecting and sorting household packaging waste for recycling. Defra expects these fees will incentivise obligated companies to minimise packaging. From 2025-26, obligated businesses pay variable fees, which Defra expects to incentivise the use of more easily recyclable packaging;
 - under consistent collections, all local authorities, businesses and organisations such as schools and hospitals in England will be required to collect food waste and dry recyclable materials (paper and card, metal, plastic, and glass) separately where possible. Local authorities will also need to provide a separate garden waste collection for households. Defra expects this will address misunderstanding and error among householders over what can be recycled, and improve access to certain recycling services, leading to increased recycling rates. Local authorities, businesses, and organisations such as schools and hospitals must also collect materials separately, where possible, which Defra expects will improve the quality of recyclate and stimulate the secondary market for recycled material in the UK, leading to reduced use of raw materials. Defra expects that increased provision for food and garden waste collection will reduce the amount of biodegradable waste to landfill and thereby reduce the associated greenhouse gas emissions; and
 - under the deposit return scheme, customers will pay a deposit on single-use drinks in plastic bottles or aluminium cans up to three litres in volume. Defra expects that this will incentivise increased recycling rates for these materials. Defra expects that increased recycling of plastic as a result of both the consistent collections and the deposit return scheme will result in less plastic waste going for incineration, which will reduce the associated greenhouse gas emissions.
- 3 Modelling work carried out by WRAP suggests that government's ambition to double resource productivity by 2050 would not be met if historical trends in economic growth and resource consumption continue without further interventions from government. Potential policy interventions put forward by WRAP and the University of Leeds could help meet this ambition by further increasing resource productivity by 19% by 2050 and reducing consumption of raw materials by 16%.
- 4 Defra introduced a ban on certain plastic products in October 2020 (plastic straws, stirrers and cotton buds) and has announced that it will ban a number of other single-use plastic items from October 2023, including single-use plastic plates, trays and bowls.
- 5 The UK plastics pact brings together businesses, government and other organisations to tackle plastic waste. WRAP has produced a roadmap for achieving the target to work towards all plastic packaging placed on the market being recyclable, reusable or compostable by 2025 for businesses that have signed up to the UK plastics pact. These businesses account for two-thirds of all consumer packaging used in the UK.
- 6 This is under review as Defra has yet to finalise and publish its requirements for consistent collections, which is part of the collection and packaging reforms.
- 7 Defra's analysis of forecast performance in reducing greenhouse gas emissions from the waste sector excludes energy from waste, as this falls under the power sector for the purposes of the National Inventory Report on greenhouse gas emissions.

Source: National Audit Office analysis of Department for Environment, Food & Rural Affairs documents

Improving resource efficiency

1.19 Improving resource efficiency involves getting more use from raw materials that are used to produce and manufacture the products we need and use, before they are discarded. Government considers that most of the damage to the environment from waste could be avoided at the design and production stages by considering the materials used in production and the ease with which products can be reused or repaired. Improving resource efficiency through more sustainable design and production was central to Defra's 2018 Strategy.

1.20 The 2018 Strategy included an ambition to double resource productivity by 2050. Resource productivity is a similar concept to resource efficiency but is measured by assessing the volume of materials used in the economy relative to economic growth. Modelling work carried out by WRAP suggests that progress would be made but that this ambition would not be met if historical trends in economic growth and resource consumption continue without further interventions from government. Potential policy interventions put forward by WRAP and the University of Leeds could help meet this ambition by further increasing resource productivity by 19% by 2050 and reducing consumption of raw materials by 16%.

1.21 Defra considered setting a long-term statutory target for resource efficiency in 2022. It decided not to because it did not yet have a reliable way of measuring such a target. Defra also recognised it had more to do to build its understanding of the impacts and risks of potential policy interventions to ensure that a target in this area would be achievable. Without these foundations in place, resource efficiency may receive less attention than tackling residual waste, which does have a measurable statutory target. In its advice to government on the long-term environmental targets Defra set under the 2021 Environment Act, the Office for Environmental Protection (OEP) reiterated that tackling waste 'upstream' at the design and production stage is most effective. It raised concerns that only having a residual waste target in legislation would "run contrary to government's stated focus [on a circular economy] as it does not directly incentivise upstream measures or the overall impact of resource use on the environment". Many of the stakeholders we spoke to from the waste sector, local authorities and environmental groups told us they were concerned that government had not given waste prevention and re-use sufficient priority.

1.22 Defra and the former Department for Business, Energy & Industrial Strategy (now DESNZ) have developed their joint working arrangements on resource efficiency. Defra has a statutory requirement to publish a waste prevention programme, the first of which it published in 2013. In March 2021 it issued a new draft plan for waste prevention in England for consultation. It has not yet published a final version, despite anticipating that it would do so by mid-September 2021 (within three months after the consultation closed). Defra re-committed in the Environmental Improvement Plan 2023 to publish a new programme for maximising resources and minimising waste for England. Defra told us that this includes a joint Defra-DESNZ research programme into resource efficiency, which is under way.

Understanding the waste system as a whole

1.23 As part of developing effective long-term plans government must understand how the waste system as a whole needs to change. This will help ensure that it develops a suite of policy interventions that represent the most efficient way to achieve its overall ambitions, that it focuses limited resources where they can have most impact, and that its interventions work effectively together.

1.24 Defra is working on a waste infrastructure 'roadmap', which it expects to publish to help industry build an understanding of the amount and type of waste facilities likely to be needed in England to 2035. Determining how the waste system needs to change is complicated by a range of factors, including the multiple objectives and targets that government has for the waste sector (Figure 1). For example:

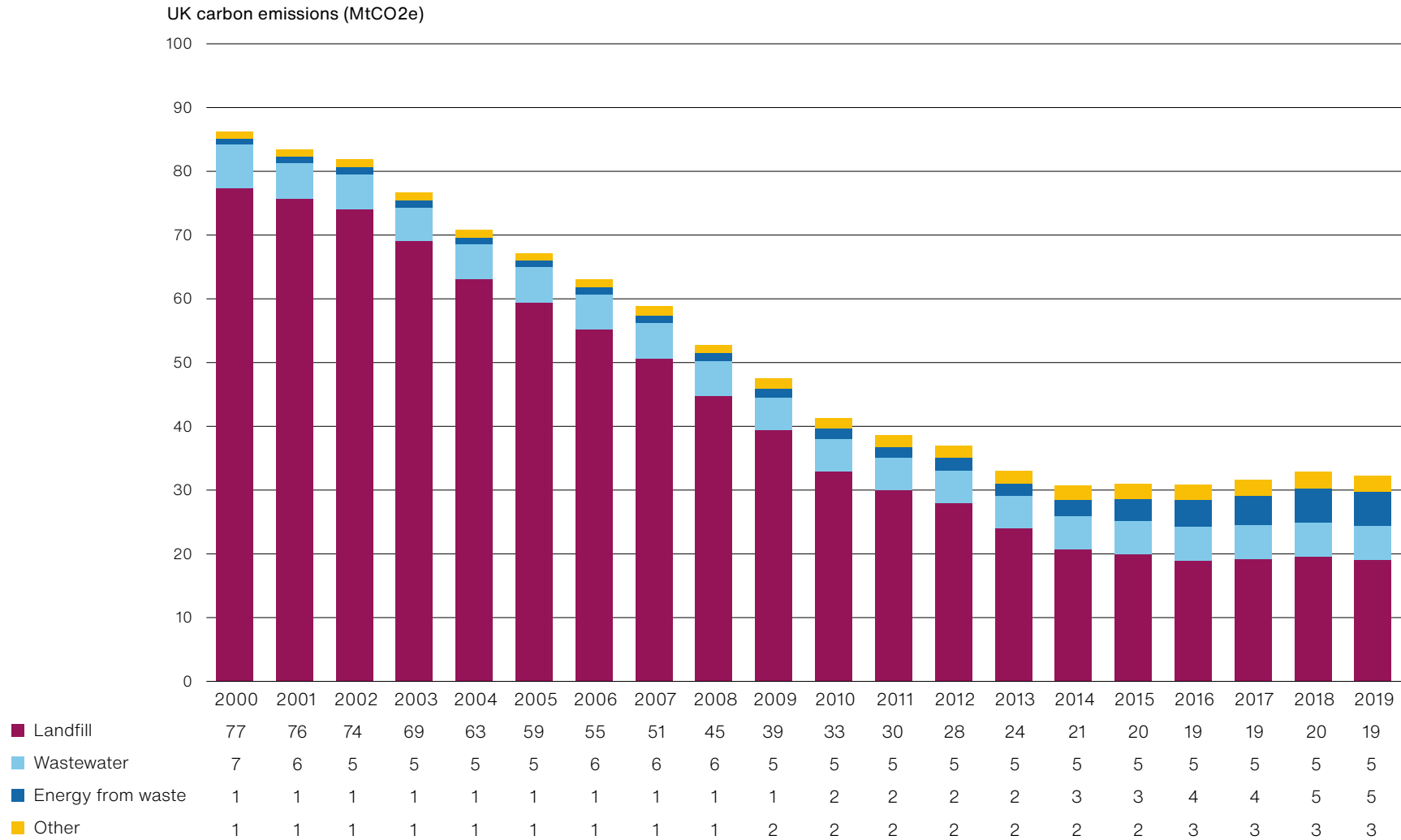
- the amount of plastic waste that is burnt in energy-from-waste facilities both affects and is affected by a number of government objectives and policies. Energy-from-waste plants process residual waste in a way that captures usable energy, for example by burning waste and using the heat to generate electricity. Defra considers that processing waste in this way is environmentally preferable to landfill, provided certain conditions are met.¹¹ Emissions from energy-from-waste facilities increased between 2013 and 2019 (**Figure 5**) as local authorities sent more waste to these facilities and less to landfill. Future trends in emissions from energy-from-waste will depend, in part, on how successful Defra is in preventing plastic waste and increasing recycling rates as burning plastic produces greenhouse gas emissions. Emissions from energy-from-waste will also depend, for example, on the success of government's approach to deploying carbon capture and storage technology at scale, as well as its proposal to extend the UK emissions trading scheme to the energy-from-waste sector; and
- the recycling capacity needed in England also depends on Defra's success in preventing waste and increasing recycling rates, as well as the amount of waste exported for reprocessing overseas. According to data from the National Packaging Waste Database, the UK exported 46% of plastic packaging for reprocessing abroad in 2022. In 2021 a Defra minister reiterated a manifesto commitment to ban the export of plastic waste to non-OECD countries. The Environment, Food and Rural Affairs Committee has called for a ban on the export of all plastic waste from the UK by 2027 to reduce the country's contribution to global plastic waste pollution.

¹¹ Defra considers that energy-from-waste is better than landfill, provided that the residual waste being used has the right renewable content and is matched with a plant that is efficient enough at turning the waste to energy.

Figure 5

UK carbon emissions in the waste sector between 2000 and 2019

Greenhouse gas emissions from landfill fell between 2000 and 2016. Emissions from energy-from-waste facilities increased between 2013 and 2019



Source: National Audit Office analysis of the Climate Change Committee's reporting of waste sector emissions

Monitoring and evaluating overall progress

1.25 In order to track progress and refine its plans Defra will need good information on outcomes such as waste production, landfilling and recycling. Timely data on outcomes would also enable more effective programme management by Defra, who should be able to track whether interventions are having the desired effect as they come on stream. Defra publishes an annual monitoring report that includes information on these and other outcomes. However, there are serious gaps and limitations in the data that limit their usefulness. Nine out of 23 indicators in Defra's November 2022 progress monitoring report were almost three years out of date at publication, for 2019 or earlier, with no data for a further three indicators which are under development. Data on the total generation of waste, for example, were from 2018. Defra does not publish data on how much commercial and industrial waste is recycled because it does not yet have a robust methodology for determining this. Commercial and industrial waste represents around one-fifth of total waste generated in the UK.

1.26 Improving the completeness and timelines of data on waste is a major challenge, in part because of how they are recorded. At present, data on waste transfers are recorded by waste operators in disparate systems and in diverse and unconnected ways, sometimes on paper and without sharing beyond the two parties to a specific waste transaction. Large amounts of data are either not collected or not collated centrally anywhere, with particular knowledge gaps related to commercial, industrial, construction and demolition waste. The waste tracking system aims to join up and digitise the current fragments. Its primary purpose is to save time and improve efficiency for legitimate waste companies and deter rogue operators to help tackle waste crime. Part of the rationale for the new system is also to improve data.

1.27 The Committee of Public Accounts (PAC) criticised Defra's slow progress on waste tracking as part of an October 2022 report on waste crime, on the basis that waste tracking was not yet at the pilot stage, four years after the project began. In December 2022 Defra signed a contract with an IT supplier for the digital waste tracking system. Defra expected it would begin testing a private pilot of digital tracking of 'green list' waste with a small group in summer 2023, with this expanding to a public testing phase if successful.¹² This will build on prototype work that Defra has already carried out, and which passed an 'alpha' assessment in July 2021.

¹² Green list waste is a term used by the waste sector to describe non-hazardous wastes that can be exported for recycling to certain countries as long as it is sorted and uncontaminated.

1.28 While we have not carried out a full review of Defra's approach to waste tracking, as part of this study we identified issues in its approach that reflect common challenges for complex digital transformations across government. These are important to get right at the outset to avoid storing up problems for the future. In particular:

- many departments face a large capacity gap for people with digital skills. Between April 2021 and May 2023 Defra repeatedly identified resourcing as an 'amber' risk area where there were "known issues that [were] under control". The waste tracking team grew from 6.5 full-time equivalent (FTE) staff in 2020-21 to 18.7 FTE in 2022-23; and
- previous NAO work has found that a key challenge for departments in setting up large digital programmes is understanding aims, ambition and risk. Departments have often taken longer to deliver programmes than originally scheduled due to insufficient or unrealistic scoping and planning. Defra is planning a pilot of digital tracking for green-list waste (paragraph 1.27), which gives it an opportunity to test the technology at a small scale. Detailed exploratory work for other parts of the waste tracking system was ongoing at the time of our review. It will be important that Defra has a good understanding of the level of risk in scaling up the system from its first pilot to ensure that timescales and budget are realistic. There are likely to be particular risks associated with collecting sufficiently meaningful, good-quality and consistent data, given the range of organisations that the system will need to interact with. Defra has a budget of £9.5 million to build the waste tracking service and anticipated in its November 2022 project business case that the build phase would be complete by April 2025.

1.29 Defra plans to carry out evaluations to inform its understanding of the impact of a number of its priority resources and waste initiatives once they are implemented. It expects to evaluate policies related to waste crime, its collection and packaging reforms, and reducing the damage caused by plastics. It expects to carry out an overarching evaluation of the impact of the Strategy as a whole, which would start after the evaluations of specific policies, in 2027 at the earliest. Government requires departments to carry out post-implementation reviews (PIRs) to evaluate the success with which new regulations have met their objectives within five years of the regulations being implemented, which they can do as part of evaluations. Due to pressures caused by EU Exit and the COVID-19 pandemic, as of May 2022 Defra had a backlog of 62 outstanding PIRs out of a total of 91 that were required between 2016 and 2022. In March 2023 the backlog was 63 PIRs.

Part Two

The collection and packaging reforms

2.1 This Part examines:

- the scope, purpose, costs and benefits of the collection and packaging reforms (the reforms);
- progress to date;
- programme design and set-up; and
- managing ongoing risks to successful delivery.

The scope, purpose, costs and benefits of the collection and packaging reforms

2.2 The reforms are a programme of three interrelated projects, which will bring about major changes to how waste is paid for and collected:

- The extended producer responsibility for packaging scheme will require certain companies that produce packaging or sell packaged products in the UK to cover the full costs of collecting and sorting household packaging waste for recycling. The Department for Environment, Food & Rural Affairs (Defra) intends that the scheme will include variable fees, depending on the recyclability of the material used.
- The consistent collections project will require local authorities, businesses and organisations such as schools and hospitals in England to collect food waste and dry recyclable materials (paper and card, metal, plastic and glass) separately where possible. Local authorities will also need to provide a separate garden waste collection for households.
- The deposit return scheme in England, Wales and Northern Ireland will place a redeemable deposit on all single-use plastic and metal drinks containers up to three litres in volume (**Figure 6**).

Figure 6

The collection and packaging reforms

The reforms will bring about major changes to how waste is paid for and collected

How the Department for Environment, Food & Rural Affairs (Defra) expects the schemes to work ¹	
Extended producer responsibility for packaging in the United Kingdom	<p>Businesses across the UK with a turnover of more than £2 million and handle at least 50 tonnes of packaging each year will be charged a fee intended to cover the full costs of collecting and sorting household packaging waste for recycling. These businesses will need to meet recycling targets and label packaging to show its recyclability.</p> <p>From 2025, the fees will vary depending on the amount and type of packaging used, with lower fees for packaging that uses more easily recyclable material.</p> <p>A public sector scheme administrator will operate the scheme, including setting and collecting the variable fees from these businesses and ensuring that payments to cover the cost of collecting and sorting household packaging waste for recycling are made to local authorities.</p> <p>Businesses with a turnover of between £1 million and £2 million and that handle at least 25 tonnes of packaging each year, or businesses with a turnover of more than £1 million and that handle between 25 and 50 tonnes of packaging each year, will be required to report data on the amount and type of packaging.</p>
Consistent recycling for households and businesses in England	<p>All local authorities and businesses in England will be legally required to collect food waste and garden waste (households only) separately from dry recyclables (metal, glass, paper and card, plastic).</p> <p>All households will have a weekly separate food waste collection.</p> <p>Unless local authorities make a written assessment supporting an exception, they will be required to collect waste categories separately, unless government specifies otherwise.</p>
Deposit return scheme in England, Wales and Northern Ireland	<p>Consumers pay an up-front deposit at point of purchase on single-use drinks in plastic bottles or aluminium cans. Consumers can redeem deposits by returning the container to a designated return point, typically hosted by retailers.</p> <p>Defra has not set the value of deposits. This will be set by the industry-led deposit management organisation which will run the scheme on behalf of industry. Scotland, which is implementing a separate deposit return scheme has set the deposit level at 20p per drinks container.</p> <p>Producers of in-scope drinks containers will be required to pay fees to the deposit management organisation to cover the running costs of the scheme and place a redeemable deposit on in-scope drinks containers they place on the market.</p>

Note

- 1 The scope of the consistent collections scheme set out in this table is based on government's consultation document issued in 2021. At the time of this report government had not published its response to the consultation, which will set out the final scope of the scheme.

Source: National Audit Office analysis of Department for Environment, Food & Rural Affairs published documents

2.3 Defra's main aims for the reforms are to:

- shift responsibility for paying for managing household packaging waste in the UK from taxpayers to businesses, thereby applying the 'polluter pays' principle;
- incentivise producers of household packaging waste and retailers who sell packaged goods to use less packaging, and use more easily recyclable materials in packaging;
- increase household and municipal recycling rates, thereby reducing the levels of residual waste sent, for example, to landfill or to be incinerated to produce energy; and
- reduce greenhouse gas emissions from biodegradable waste sent to landfill.

2.4 In May 2021, Defra published a summary impact assessment of the potential costs and benefits of the reforms.¹³ It anticipated that the main costs would arise from:

- Defra estimated that companies that produce packaging or sell packaged goods will pay around £1 billion (2020 present values, 2019 prices) a year in fees to cover the costs to local authorities of collecting and sorting household packaging waste.¹⁴ It estimated that companies will pass on most (85%) of these costs to consumers, increasing an average household's expenditure by around £40 a year;
- Defra intends that the additional income for local authorities will help fund the increase in the costs to collect and process dry recycling arising from consistent collections. If the extended producer responsibility project results in less packaging waste, there is potential for the cost to collect dry recycling to reduce over time. A new scheme administrator will calculate payments to individual local authorities based on a model of what an efficient and effective collection service would cost. A separate food waste collection from households will be funded from a one-off distribution by Defra to local authorities of £295 million for collection vehicles and food waste caddies, with funding for additional operational costs yet to be determined;
- the deposit return scheme for single-use plastic and metal drinks containers will be funded by the companies producing the containers. Defra estimated this at an average annual cost of £621 million (2020 present values, 2019 prices), reduced to £330 million (2020 present values, 2019 prices) after accounting for estimated unredeemed deposits; and

¹³ These are the latest comparable figures Defra has available, published in May 2021. It assumed the extended producer responsibility scheme administrator would be established in the private sector and producer payments would begin in 2023, which is no longer the case. We have not audited Defra's figures.

¹⁴ Defra intends that, in time, companies that produce packaging or sell packaged products will also pay fees under extended producer responsibility to cover the full net costs of collecting, sorting and recycling packaging waste from businesses. It will review options for these payments in 2026–27.

- government expected that the reforms will reduce the amount of waste to landfill, cutting landfill tax receipts by £5.6 billion between 2023 and 2035 (2020 present values, 2019 prices).

2.5 Defra expects a number of benefits from the reforms. It expects that the reforms will make a substantial contribution towards meeting its overall resources and waste ambitions (see Part One, paragraph 1.13 and Figure 4). It anticipates that the main benefits would arise from: the estimated value to society of reduced greenhouse gas emissions through consistent collections (£3.4 billion between 2023-2035), reduced litter through the deposit return scheme (£11.8 billion between 2022-2032), savings to local authorities in reduced waste management costs through the extended producer responsibility scheme (£9.5 billion between 2023-2032) and landfill tax savings to businesses.¹⁵ Defra also expects that the reforms will represent the first of several extended producer responsibility schemes for sectors such as textiles and tyres.

Progress to date

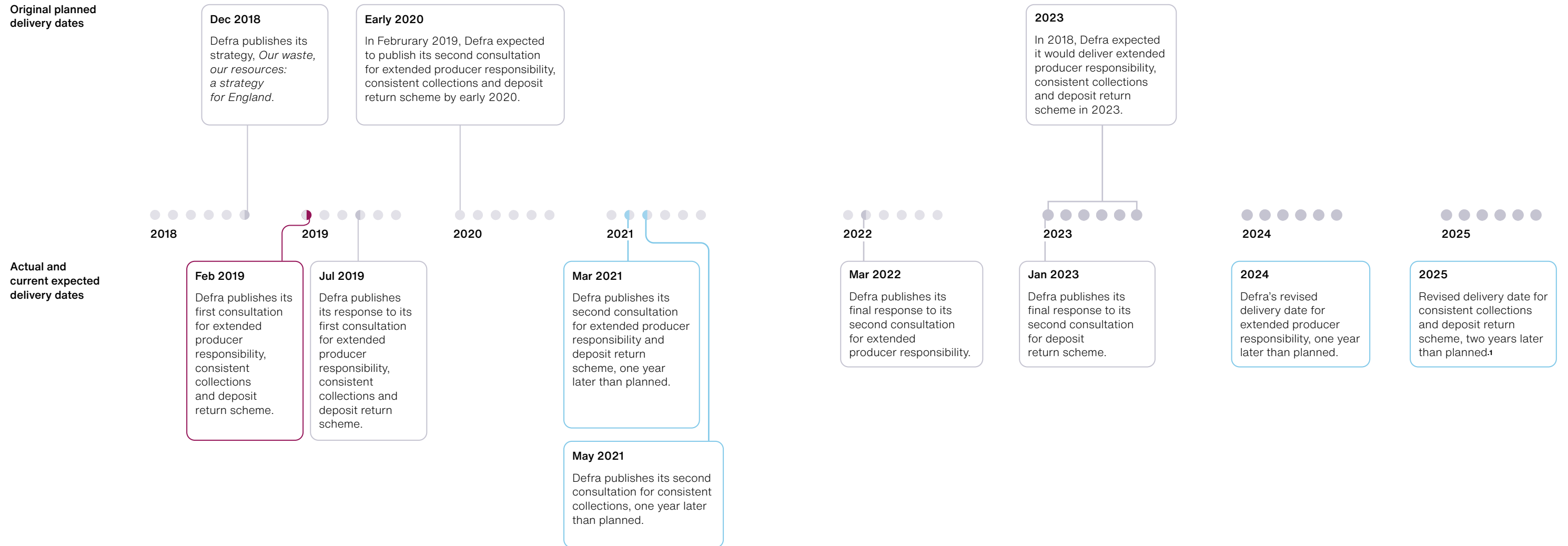
2.6 In its 2018 resources and waste strategy (the Strategy) Defra committed to deliver the reforms in 2023. In 2021, Parliament passed the Environment Act, which provides government with the powers to implement the reforms. However, each stage has taken longer than it originally expected (**Figure 7** on pages 38 and 39). As at April 2023 Defra expected to introduce the extended producer responsibility for packaging scheme in 2024 and the deposit return scheme in 2025. It has not yet decided the timing for the implementation of consistent collections and still has not published the government's response to the 2021 consultation on these reforms.

2.7 Consultations on the extended producer responsibility and deposit return schemes have reduced the scope of its original proposals. Until at least 2026, fees paid by businesses under the extended producer responsibility scheme cover only household waste and not commercial waste, as was originally proposed in the consultation. Defra also decided to retain its threshold for businesses liable to pay fees at those with £2 million turnover that handle 50 tonnes of packaging each year. Defra had intended to reduce this threshold by half. Defra estimates that this means that around 30% fewer businesses than originally intended will be required to cover the cost to local authorities of managing their packaging waste. Those businesses may, therefore, have less incentive to reduce packaging and make it more recyclable. As a result of consultation, Defra removed glass drinks containers from the scope of the deposit return scheme.

¹⁵ The figures in paragraph 2.5 are discounted to 2020 present value and are in 2019 prices.

Figure 7
Timeline of the collection and packaging reforms programme between 2018 and 2025

The Department for Environment, Food & Rural Affairs (Defra) expects to deliver the reforms later than expected



- No delay against the original delivery date
- Delayed against the original delivery date

Note
¹ Defra has not yet published its final response to its second consultation for consistent collections, nor has it confirmed the revised delivery date for the reforms.

2.8 The Infrastructure and Projects Authority (IPA) has carried out two reviews of the deliverability of the reforms, in June and September 2022. In its first review IPA concluded that successful delivery of the reforms to time appeared to be unachievable. It gave the reforms a 'red' rating, meaning that substantial changes to the programme might be required to improve the likelihood of successful delivery. The IPA's second review found that Defra had made good progress in implementing its recommendations. Defra has implemented or is working towards implementing all of the IPA's recommendations. However, IPA's delivery confidence remained red-rated, as it did not have confidence that the extended producer responsibility scheme (the first of the collection and packaging reform projects) could be delivered by its expected deadline in 2024-25. The IPA nevertheless considered that essential work on the programme should continue, as it wanted to minimise any further delays.

Programme design and set-up

2.9 The following sections draw on the IPA's assessments together with our own analysis to examine how effectively Defra tested the design of the reforms, and how effectively it set the programme up.

Assessment of options for a deposit return scheme

2.10 Defra's case for the implementation of the deposit return scheme is based on its assessment that most (91%) of the value comes from the estimated value to society of reducing litter. This is inherently difficult to determine. A study commissioned by Defra asked 561 people how much extra council tax they would be prepared to pay in return for local environmental improvements, including reduction of litter for a 1-point improvement on a 10-point scale, and then extrapolated the results across the population. Although this approach is in line with HM Treasury guidance on economic appraisal, these benefits are inherently uncertain because they are based on a hypothetical question.

2.11 Defra recognised this uncertainty and that the figures should be treated with caution. A 2021 study by WRAP showed that 43% by volume of litter in England was drinks containers covered by the scope of the deposit return scheme. It seems likely that if take-up of the scheme is high, litter from drinks containers will reduce to some extent. While comparisons across different countries and time periods present methodological challenges, some studies have shown a link between a deposit return scheme and litter reduction. Some stakeholders told us that they were sceptical about whether a deposit return scheme is value for money because of the level of cost involved in setting it up, and because the containers it covers can already be recycled through kerbside collections. In its 2021 summary impact assessment of the costs and benefits of the reforms, Defra estimated that an 'all-in' deposit return scheme could cost businesses £6.8 billion (2020 present values, 2019 prices) over 11 years to set up and implement. This cost would be reduced where consumers do not redeem their deposits. Defra estimates that total benefits over the same period would amount to £12.9 billion, of which £11.8 billion (2020 present values, 2019 prices) arises from the estimated economic value of reducing litter.¹⁶ Defra's appraisal of the scheme assumes that the scheme will result in an 85% reduction in litter from drinks containers.

2.12 Defra has not currently planned a pilot for the deposit return scheme, despite the inherent uncertainties about the benefits of the scheme. Defra told us that it planned to use evidence from Scotland's introduction of a similar scheme to inform implementation of the scheme in England, Wales and Northern Ireland but the scheme in Scotland has been delayed until at least October 2025, which is when Defra plans to launch its scheme.

Securing the people and skills that will be needed

2.13 Defra did not secure in good time the resources and expertise it needed to deliver the programme to the agreed timeframes. Between 2019 and 2022 Defra's preparations for delivering the reforms included preparing consultations on the three projects, supporting the production of the Environment Bill, which gave government the powers to implement new regulations, and establishing a programme board. In terms of planning for delivery, Defra produced an interim business case for the programme, and a high-level delivery plan. It did not have the core team it needed by the time of the first IPA review in June 2022, a year before it had originally planned to deliver the reforms. In June 2022, there were 32 full-time equivalent (FTE) vacancies across project delivery, finance and digital. Defra has recruited more staff to deliver the programme and has brought in consultants to support the planning of the programme. However, as of March 2023 there were 22 vacancies, out of a total headcount of 151.

¹⁶ Defra's 2021 impact assessment assumed that glass drinks containers would be within the scope of the scheme. Following the 2021 consultation, Defra decided not to include glass. Defra has not updated this impact assessment to reflect the revised scope of the scheme.

Establishing a programme timetable

2.14 When IPA carried out its first review in June 2022, Defra did not have a critical path showing what needed to happen across all the projects for the programme as a whole to deliver the expected benefits on time. IPA found that teams had focused on delivering individual projects rather than the programme as a whole, with most effort going towards the extended producer responsibility scheme, which is expected to be launched first. Defra's lack of sufficiently detailed early planning means it is developing and reviewing delivery plans at the same time as endeavouring to meet critical delivery milestones. As at March 2023 Defra still did not have a complete view of the steps needed to successfully introduce the reforms within committed timeframes. It is producing a programme-wide business case, which should improve its understanding of the interdependencies between the projects.

2.15 Between 2020 and 2022 there were issues beyond Defra's immediate control that contributed to the delays in the reforms and challenges in setting it up effectively:

- Although the COVID-19 pandemic did not heavily impact the reforms' resourcing, Defra told us it limited its engagement with stakeholders and local authorities, particularly in the early stages of the pandemic, which coincided with important phases for development of the programme in 2020. It was concerned about the ability of stakeholders to engage in future policy when they were responding to the pandemic.
- Defra had three different secretaries of state during 2022. Defra told us this led to challenges in securing ministerial approval in a timely way as it took time for the ministerial team to build its understanding of their portfolios. For example, in obtaining approval to issue responses to consultations and to procure support from consultants to support the design of the extended producer responsibility scheme administrator.
- Defra told us the one-year Spending Reviews in 2019 and 2020 restricted its ability to make long-term plans. For example, it was only in 2021 that Defra secured HM Treasury's support and the long-term funding it needed to fund separate food waste collections.

2.16 Given the significance of the collection and packaging reforms for the ambitions in government's 2018 Strategy, the scale of the changes involved, and government's original commitment to introduce the reforms in 2023, we would have expected Defra to have made substantial progress with bringing in appropriate resources and planning realistic schedules in 2019.

Managing ongoing risks to successful delivery

2.17 Defra is working to an ambitious timeline for the reforms with very little contingency. The risk of not meeting the latest deadlines for introducing the new schemes is high. There is a lot of work that it needs to carry out before the three projects launch. A key risk is whether Defra has time to finalise the detailed regulations for the fees associated with the extended producer responsibility scheme. It has not yet decided what the fees will be.

2.18 In order to reduce the risk of unsuccessful delivery or further delays, Defra has taken steps to accelerate the programme and to exert greater control over delivery. For example, it is setting up an organisation established within the public sector to administer payments from companies to local authorities under extended producer responsibility. Defra has delayed the target date for the scheme administrator to be fully operational by six months, from April 2024 to October 2024, to give it more time to design how it will work and recruit the specialist skills it will need. This gives it around 15 months from the publication of this report to create an entirely new organisation, appoint its senior staff, fully staff it and design and roll-out any training they need; put IT and other systems it needs in place; establish relationships with key stakeholders and design and prepare its approach to administering the scheme. This is an ambitious timetable given the administrator will need to process payments as soon as it is set up, for the 2024-25 financial year. It has brought in consultants to help design the scheme administrator and support the planning of the programme more widely. Defra told us it plans to implement review points at key milestones in the programme to decide whether to proceed as planned or to make a change to the programme's schedule or scope. It has also started a project to identify the main barriers and challenges to successful delivery that will require ministers' involvement to resolve.

2.19 Defra recognises that the programme of reforms is facing significant risks and that there is little contingency in the existing plans but has decided not to delay it further because it views the reforms as a key element of achieving legally binding environmental targets. It is concerned that, for example, the required contribution from the waste sector to carbon budgets may not be met if there is further delay, because the reforms are its main intervention to tackle methane emissions from landfill.

2.20 The ultimate success of the reforms depends on businesses and consumers changing their behaviour by producing less, and recycling more, waste. There are significant challenges for achieving these benefits (**Figure 8** overleaf).

Figure 8

Challenges for delivering the expected benefits from the collection and packaging reforms

Our work identified several challenges to successfully achieving the reforms' benefits

Risk/issue	Detail
Producers and retailers are not incentivised to reduce packaging or make it more recyclable	A core objective of the extended producer responsibility scheme is to incentivise producers and retailers to use fewer, and more easily recyclable materials in their packaging. However, some producers and retailers that we spoke to told us that lack of clarity about the Department for Environment, Food & Rural Affairs' (Defra's) plans has meant that they were unable to prepare for this. Producers told us that the lack of clarity about Defra's plans has meant that they have not been able to convince finance departments and finance directors to invest in changes to products, production processes and innovation in packaging that could result in less and more easily recyclable packaging.
Uncertainty about when all local authorities will be collecting waste on a consistent basis	A number of local authorities have long-term contracts with waste reprocessing companies. Breaking these agreements in order to comply with the requirements of the consistent collections project would come at a substantial cost. Defra has decided to allow these local authorities to delay when they implement the consistent collections reforms where the cost of breaking the contract makes delay a value-for-money option. However, Defra has still not finalised how many local authorities this relates to, and therefore when all local authorities will be collecting waste consistently and what the impact on its objectives and targets will be.
Uncertainty over the number of local authorities that will not collect dry waste separately under the consistent collections scheme	Based on a written assessment, local authorities can collect dry recyclable waste together if it would be technically or economically impractical to collect separately, or if there would be no significant environmental benefit from separate collection. This may reduce the quality of recycling achieved. Defra does not know how extensive these exceptions will be and what the impact on its objectives and targets could be.
Uncertainty around requirements and funding for consistent collections could discourage local authorities from taking action	Local authorities do not yet know how extended producer responsibility payments will affect their overall funding beyond 2024-25. This could lead to pressure on supply chains if a number of local authorities start the process of procuring new lorries and bins at the same time once funding becomes clearer. There is also the risk that local authorities may not have begun to procure the additional required equipment such as lorries and bins, and implement the required changes in time, resulting in a longer transition period before all local authorities are collecting waste as required and putting the achievement of recycling targets and greenhouse gas emissions savings at risk.
Insufficient recycling facilities to deal with the increased volumes of recycling arising from the reforms	Current levels of plastic reprocessing capacity are insufficient to process the additional plastic packaging collected through the reforms. If new infrastructure is not developed there is a risk that the packaging will be disposed of by incineration or landfill, or exported to OECD countries.
Payments are reduced through fraud and error	There is a risk that companies do not pay the full fees that they owe through the extended producer responsibility scheme. This could be because they do not realise what is due, or because they under-report their packaging data. Additionally, the reforms involve setting up bodies including the extended producer responsibility scheme administrator and for the deposit return scheme a deposit management organisation which will collect and distribute large sums of money. A new organisation formed at speed could increase fraud and error, for example, if the data systems do not work effectively. Defra recognises there are fraud and error risks, and it is examining these in detail. In 2023, it recruited a fraud specialist.

Note

1 This is not a complete list of all risks to achieving the reforms' benefits.

Source: National Audit Office analysis of Department for Environment, Food & Rural Affairs documents

2.21 Since the end of 2022, Defra has developed an improved stakeholder management approach to help address some of these challenges. However, building business and local authority confidence in the reforms requires significant work. Some stakeholders told us that while they felt their views were taken into account during the consultation process on the reforms, they have felt unclear about the detailed delivery plans, as well as being asked to respond to requests from Defra in very little time. Businesses told us that a clear articulation of how all three projects fit together is critical to them being able to make the case within their organisations for investment in new products and processes but that this has been lacking. The continued lack of detailed delivery plans to share with stakeholders makes the task of improving relations more difficult and Defra has identified the production of detailed delivery plans as critical to building confidence in businesses and local authorities.

2.22 It is important that Defra has sufficient focus on delivering the benefits from its reforms. However, in September 2022, it did not have a benefits management plan with clear accountabilities for realising and monitoring the benefits. As at April 2023 it had developed a draft benefits plan but this was not yet finalised. Defra does have a plan to evaluate and monitor progress with the projects in the reforms and plans to use this to inform how it will manage and deliver the benefits of the reforms. Without a finalised benefits plan, however, there are risks that its teams lose focus on benefits in the run-up to launching the schemes, and that the reforms fail to achieve the levels of recycling, waste reduction and greenhouse gas emissions savings that are needed. It currently plans to start collecting data and monitoring the performance of the reforms as early as one year after implementation of each project. Given the complexity and interrelated nature of the reforms, acting decisively on such information will be important.

Appendix One

Our audit approach

1 This report examines the Department for Environment, Food & Rural Affairs' (Defra's) approach to implementing government's 2018 resources and waste strategy (the Strategy). This report examines whether Defra is on track to achieve its resources and waste ambitions in a way that represents value for money. It assesses whether government has effective plans to achieve its resources and waste ambitions; and whether Defra is on track to successfully implement its main programme, the collection and packaging reforms. The report does not cover Defra's ambition to tackle waste crime, which was subject to a separate National Audit Office (NAO) report in 2022. Our independent conclusions are based on the analysis of evidence we collected between September 2022 and March 2023.

Qualitative analysis

Interviews with department officials and other public sector bodies

2 To understand the steps taken by Defra to implement its Strategy, we conducted more than 20 interviews with relevant officials within Defra. These meetings covered, for example:

- Defra's strategic objectives and accountabilities;
- Defra's governance arrangements;
- Defra's management of interrelationships between activities across the resources and waste work;
- Defra's funding and capability for implementing its Strategy;
- Defra's work with and influencing of other departments, delivery partners and the wider waste sector to deliver government's ambitions;
- Defra's response to external reviews;
- Defra's information to assess outputs, outcomes, benefits and costs;
- Defra's progress on its Strategy ambitions;

- Defra's response to the reasons for delays and their impacts;
- Defra's understanding of the main risks to achieving its ambitions;
- Defra's approach to risk management; and
- Defra's understanding of the main fraud risks and how it is managing them.

3 Each interview was tailored to the responsibilities of each team, for example, the questions for the reforms programme teams were relevant to their particular policy areas.

4 We also met with officials from eight other public sector bodies (Infrastructure and Projects Authority (IPA), Environment Agency, Office for Environmental Protection, National Infrastructure Commission, HM Treasury, Department of Levelling up, Housing & Communities, Department for Energy Security & Net Zero and the Climate Change Committee) to inform our study approach and understand their perspectives on the implementation of the Strategy. These meetings sought to understand their views on:

- the government's 2018 waste and resources strategy;
- how Defra is implementing the waste reforms and delivering the Strategy's objectives;
- Defra's progress since 2018;
- the information available to enable progress to be monitored and to inform policy decisions; and
- the main opportunities and risks going forward.

5 Interviews primarily took place between August 2022 and March 2023. These interviews were carried out online and typically lasted for one hour with detailed notes being taken, and they were tailored to the interests of the organisation.

Analytical approach

6 The notes of these interviews were analysed and common themes were identified to inform our conclusions.

Interviews with wider stakeholders

7 To inform our study approach and capture a range of views and perspectives on the effectiveness of current structures and plans, we interviewed:

- industry experts and associations;
- academics and research institutes;
- businesses within the retail industry; and
- the waste industry.

8 We conducted interviews with 14 wider stakeholders chosen because of their broad range of perspectives. The approach to each interview was tailored based on the stakeholder. Stakeholders interviewed included:

- Chartered Institution of Wastes Management
- Local Government Association
- The Environmental Services Association
- National Association of Waste Disposal Officers
- WRAP
- Association of Directors of Environment, Economy, Planning & Transport
- Aldersgate Group
- British Retail Association
- the Local Authority Recycling Advisory Committee
- Suez
- Institute of Materials, Minerals & Mining
- Biffa
- Green Alliance
- Wildlife and Countryside Link

9 With support from the British Retail Association and the Aldersgate Group, we carried out two round table discussions with representatives from the retail and waste sectors.

10 The meetings and round tables sought to understand their views on:

- the government's 2018 waste and resources strategy;
- how Defra is implementing the waste reforms and delivering the Strategy's objectives;
- Defra's progress since 2018;
- the information available to enable progress to be monitored and to inform policy decisions; and
- the main opportunities and risks going forward.

11 Interviews and roundtables primarily took place between August 2022 and March 2023. These interviews and round tables were carried out online and typically lasted for one hour with detailed notes being taken.

Analytical approach

12 The notes of these interviews were analysed and common themes were identified.

Document review

13 We reviewed a wide range of published and unpublished documents to inform our study. This included a review of:

- published documents relating to the collection and packaging reforms;
- business cases;
- IPA's review reports;
- internal progress reporting;
- board meeting minutes and papers;
- published and draft strategies and reports; and
- external research reports.

14 Our document review was carried out primarily between August 2022 and March 2023. Documents reviewed primarily covered the period between December 2018 and February 2023.

Analytical approach

15 Each document was analysed and common themes were identified.

Independent review

16 We received independent review and advice from Margaret Bates, Professor of Sustainable Wastes Management, University of Northampton.

Quantitative analysis

17 We used datasets from Defra to understand how recycling rates have changed over time.

This report has been printed on Pro Digital Silk and contains material sourced from responsibly managed and sustainable forests certified in accordance with the FSC (Forest Stewardship Council).

The wood pulp is totally recyclable and acid-free. Our printers also have full ISO 14001 environmental accreditation, which ensures that they have effective procedures in place to manage waste and practices that may affect the environment.



National Audit Office

Design and Production by NAO Communications Team
DP Ref: 012236-001

£10.00

ISBN 978-1-78604-500-3



9 781786 045003