



Department
for Environment
Food & Rural Affairs

Call for evidence to support the near elimination of biodegradable waste disposal in landfill from 2028

Date: May 2023

We are the Department for Environment, Food and Rural Affairs. We're responsible for improving and protecting the environment, growing the green economy, sustaining thriving rural communities and supporting our world-class food, farming and fishing industries.

We work closely with our 33 agencies and arm's length bodies on our ambition to make our air purer, our water cleaner, our land greener and our food more sustainable. Our mission is to restore and enhance the environment for the next generation, and to leave the environment in a better state than we found it.



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Any enquiries regarding this publication should be sent to us at:

residualwaste@defra.gov.uk

www.gov.uk/defra

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Confidentiality and data protection information

A summary of responses to this consultation will be published on the Government website at: www.gov.uk/defra. An annex to the consultation summary will list all organisations that responded but will not include personal names, addresses or other contact details.

Defra may publish the content of your response to this consultation to make it available to the public without your personal name and private contact details (for example, home address, email address, etc).

If you click on 'Yes' in response to the question asking if you would like anything in your response to be kept confidential, you are asked to state clearly what information you would like to be kept as confidential and explain your reasons for confidentiality. The reason for this is that information in responses to this consultation may be subject to release to the public or other parties in accordance with the access to information law (these are primarily the Environmental Information Regulations 2004 (EIRs), the Freedom of Information Act 2000 (FOIA) and the Data Protection Act 2018 (DPA)). We have obligations, mainly under the EIRs, FOIA and DPA, to disclose information to particular recipients or to the public in certain circumstances. In view of this, your explanation of your reasons for requesting confidentiality for all or part of your response would help us balance these obligations for disclosure against any obligation of confidentiality. If we receive a request for the information that you have provided in your response to this consultation, we will take full account of your reasons for requesting confidentiality of your response, but we cannot guarantee that confidentiality can be maintained in all circumstances.

If you click on 'No' in response to the question asking if you would like anything in your response to be kept confidential, we will be able to release the content of your response to the public, but we won't make your personal name and private contact details publicly available.

There may be occasions when Defra will share the information you provide in response to the consultation, including any personal data with external analysts. This is for the purposes of consultation response analysis and provision of a report of the summary of responses only.

This consultation is being conducted in line with the Cabinet Office "Consultation Principles" and be found at: <https://www.gov.uk/government/publications/consultation-principles-guidance>.

Please find our latest privacy notice uploaded as a related document alongside our consultation document.

If you have any comments or complaints about the consultation process, please address them to:

Call for Evidence to support the near elimination of biodegradable waste disposal in landfill from 2028

Consultation Coordinator, Defra

2nd Floor, Foss House, Kings Pool,

1-2 Peasholme Green, York, YO1 7PX

Or email: consultation.coordinator@defra.gov.uk

Introduction

Climate change is one of the greatest global challenges and action is urgently needed. In 2019 we became the first major economy to set a legally binding target to achieve net zero by 2050. In 2021 the UK government published its [Net Zero Strategy: Build Back Greener](#), becoming the first major economy to set a legally binding target to achieve net zero by 2050.

In light of this and the need to deliver Net Zero, government is committed to achieving the near elimination of biodegradable waste to landfill from 2028 and its removal from the residual waste stream. This Call for Evidence is intended to ensure any government intervention, as well as its timing, is targeted and evidence based. However, we encourage waste producers, Local Authorities, waste operators and investors to consider their own practices and explore options to prevent biodegradable wastes from being sent to landfill at the earliest opportunity ahead of any formal policy intervention.

This Call for Evidence will also help deliver the recommendation of the Climate Change Committee (CCC) that the landfilling of biodegradable waste is discontinued as part of the net zero pathway for waste for Carbon Budget 6 (CB6).

This Call for Evidence does not set out new policy. It is however intended to inform future policy development. The Government is committed to supporting comprehensive and frequent rubbish and recycling collections for households. We do not anticipate that these proposals will affect the configuration of household waste collections (over and above existing plans to introduce consistent household and business waste collections, including ensuring that households have a weekly food waste collection). Any associated policy changes are expected to happen further on in the process, where waste is handled and managed, after it is collected from households.

Waste is a devolved matter in the UK and this Call for Evidence and any subsequent policy development relates to England only.

Annex A includes a brief supplementary section regarding the future of landfill in England and asks whether you would be interested in taking part in any conversations around the future role of landfill and other topics relevant to landfill policy.

Additional background information on the definition of biodegradable waste and on waste policies in the Devolved Administrations is included in Annex B to this document.

Audience

We welcome views from all interested stakeholders including local authorities and other waste collectors, representatives from the waste and recycling industry, trade bodies, businesses, non-governmental organisations, third sector organisations, householders and others.

A significant number of the questions in this Call for Evidence directly ask for data or evidence that is likely to be held by waste operators or local authorities. However, there are also general open questions and we welcome views from all interested stakeholders.

Responding to this Call for Evidence

Please respond to this Call for Evidence in the following ways:

Online using the citizen space Call for Evidence at: <https://consult.defra.gov.uk/waste-and-recycling/cfe-near-elimination-bio-waste-to-landfill>

By email: residualwaste@defra.gov.uk

Or in writing to:

Residual Waste and Infrastructure Team
Defra
Seacole Building
2 Marsham Street
London
SW1P 4DF

Duration

This Call for Evidence will run for six weeks. This is in line with the Cabinet Office's 'Consultation Principles' which advises government departments to adopt proportionate consultation procedures. The Call for Evidence opens at 00.00 on 26 May 2023 and closes at 23.59 on 7 July 2023.

Handling comments after the Call for Evidence

A summary of the responses to this Call for Evidence will be published at www.gov.uk/defra. The summary will include a list of names and organisations that responded, but not personal names, addresses or other contact details. However, information provided in response to this Call for Evidence document, including personal information, may be subject to publication or release to other parties, or disclosure in

accordance with access to information regimes, such as the Freedom of Information Act 2000 (FOIA) and the Data Protection Act 2018.

If you want information, including personal data that you provide to be treated as confidential, please say so clearly in writing when you send your response to the Call for Evidence (if responding via mail or email) and explain why you need these details to be kept confidential. If responding via Citizen Space, you will be asked whether you would like your response to be treated as confidential or not. If we receive a request for a disclosure under the FOIA, we will take full account of your explanation, but due to the law we cannot provide any assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as a confidentiality request.

Defra is the data controller in respect of any personal data that you provide, and Defra's Personal Information Charter, which gives details of your rights in respect of 15 the handling of personal data, can be found at:

<https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs/about/personal-information-charter>.

Compliance with the consultation principles

This Call for Evidence is being conducted in line with Consultation Principles set out in the Better Regulation Executive guidance, which can be found at:

<https://www.gov.uk/government/publications/consultation-principles-guidance>.

If you have any comments or complaints about the Call for Evidence process, please address them to:

By email: consultation.coordinator@defra.gov.uk

Or in writing to:

Consultation Co-ordinator
Defra 2nd Floor,
Foss House,
Kings Pool,
1-2 Peasholme Green,
York,
YO1 7PX

The definition of biodegradable municipal waste

For the purpose of this Call for Evidence and subsequent policy development to explore options for the near elimination of biodegradable waste to landfill we are proposing to use the following definition of "biodegradable waste":

‘any waste that is capable of undergoing anaerobic or aerobic decomposition, such as paper and cardboard, food, garden waste, natural fibre textiles and wood.’

This definition includes the five key materials identified by the CCC: paper and card, food, garden waste, textiles and wood. For “municipal waste” we propose to use the definition set out in the Waste and Emissions Trading Act 2003 (as amended in 2020).

The official definition of municipal waste (in terms of waste codes) is under review, including for statistical purposes. As a result, there may be a change from the definition and descriptions used in this Call for Evidence. However, we do not expect this to impact significantly on the integrity of the Call for Evidence.

When reference is made to biodegradable non-municipal waste, this has the meaning of residual waste that is non-household like which is collected from commercial and industrial (including wastes from agriculture, forestry and fishing) and construction and demolition sources. It includes all waste codes not currently defined as biodegradable municipal waste.

The current situation

All waste handlers, dealers and brokers are legally obliged to take all reasonable measures to follow the [waste hierarchy priority order](#), giving priority to methods that prepare materials for reuse, recycling or recovery. Disposal (either in landfill, or by other means) is the lowest priority option. Prevention of the production of waste in the first place is key to reducing waste arisings overall and is the top rung of the waste hierarchy.

Waste that is not reused or recycled, including material that is too degraded or contaminated, is termed residual waste. Residual waste, when collected from households or businesses, is often termed “black bag” waste. It also includes bulky waste, waste from household waste recycling centres and rejects from recycling sent to:

- Landfill;
- Incineration (including with energy recovery);
- Overseas for energy recovery as refuse derived fuel (RDF) or solid recovered fuel (SRF); or
- Used in energy recovery for transport fuel.

Total local authority collected waste¹ in England in 2021/22 was 26.1 million tonnes, of which 14.5 million tonnes was residual waste. Incineration was the most favoured disposal method for local authority collected residual waste in 2021/22, accounting for 47.4% (12.4

¹ This is all waste within the remit of local authorities. It includes household waste plus other non-household waste that is household-like collected by local authorities.

million tonnes), compared to 8.1% (2.1 million tonnes) that was sent for disposal in landfill (of which 80.1% was sent directly to landfill).

Achieving the near elimination of biodegradable waste sent to landfill will help to meet a number of the ambitions in our Resources and Waste Strategy, alongside our Net Zero Strategy commitment and the transition to a Net Zero economy. These include:

- Working towards eliminating food waste to landfill by 2030;
- Sending no more than 10% of municipal waste to landfill by 2035;
- Achieving a 65% municipal waste recycling rate by 2035;
- Doubling resource productivity by 2050; and
- Eliminating avoidable waste of all kinds by 2050.

These ambitions are now underpinned by our new statutory target, set under [The Environmental Targets \(Residual Waste\) \(England\) Regulations 2023](#), to ensure that the total mass of residual waste (excluding major mineral wastes) for 2042 does not exceed 287 kg per person. This is equivalent to a 50% reduction from 2019 levels. [The Environmental Improvement Plan](#) also sets a number of interim targets to demonstrate progress against the long-term target and improve tracking of our progress.

Biodegradable waste to landfill

Recent government policy has focused on the diversion of biodegradable waste from disposal in landfill from the municipal sector. This has facilitated a marked decrease in landfilling local authority collected waste since at least 1996, following the introduction of the Landfill Tax, with 79% of this waste sent to landfill in 2000/01 (the earliest record available) decreasing to 43% in 2010/11 and just 8.1% in 2021/22².

Although good progress has been made, **an estimated 4.9 million tonnes of biodegradable municipal waste was still sent to landfill in England in 2020³.**

Whilst our commitment in the Net Zero Strategy relates to biodegradable municipal waste, we want to explore the value of policies that also focus on non-municipal biodegradable wastes. This wider scope if adopted will take us beyond our Net Zero Strategy commitment and potentially deliver greater greenhouse gas savings.

² [ENV18 - Local authority collected waste: annual results tables - GOV.UK \(www.gov.uk\)](#)

³ <https://www.gov.uk/government/statistics/uk-waste-data/uk-statistics-on-waste>

The mixed waste codes

Around 88%⁴ of municipal waste received at landfill is classified under two mixed waste codes: **19 12 12 - other wastes (including mixtures of materials) from mechanical treatment of wastes other than those covered by 19 12 11 (hazardous waste)**; and **20 03 01 – mixed municipal waste**. In 2020, 7.59 million tonnes of municipal waste sent to landfill in England was categorised as ‘wastes from mechanical treatment of waste’, and 1.6 million tonnes was categorised as ‘mixed municipal waste’.

The composition analysis that we use to calculate the landfill emissions from these two mixed codes for the National Inventory was undertaken in 2011⁵. However, it is understood that the composition of these mixed wastes has likely changed significantly since that time. This presents us with a significant data gap and limited understanding of the materials that make up mixed waste, its sources and consequently, the proportion of these mixed wastes that is biodegradable.

International policies on minimising biodegradable waste to landfill

A number of OECD countries have successfully achieved low landfilling rates through national policy and complementary fiscal measures, such as environmental taxes. Looking comparatively at policies introduced in other countries indicates that successful elimination of the ‘final stubborn percentage’ of biodegradable waste sent to landfill is possible if a number of situational factors are in place when policies are implemented. These include the underpinning of complementary measures such as separate collection of organic waste for recycling and a high recycling rate. Of key importance is sufficient lead in time before implementation of policies to allow for investment to be made in alternative treatment infrastructure for the diverted biodegradable waste. Phased implementation of policies is also used to divert some wastes before others where there is sufficient capacity in place, allowing for the policies and infrastructure for materials that are more challenging to divert to recycling or recovery to be developed.

Landfill Tax

The UK has made significant progress in reducing the amount of waste sent to landfill, particularly biodegradable waste, with reductions in tonnages and associated greenhouse gas emissions evident each year since data became available in 2010. This has been

⁴ <https://www.gov.uk/government/statistics/uk-waste-data/uk-statistics-on-waste>

⁵ <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=17447&FormSearch=Y&Publisher=1&SearchText=WR1003&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description>

largely driven by the Landfill Tax, a weight-based tax introduced in 1996 to incentivise the diversion of waste from disposal in landfill.

In Spring 2021, HM Treasury announced a review of Landfill Tax in England and Northern Ireland, to ensure it continues to support the government's ambitious environmental objectives, including zero avoidable waste to landfill by 2050. A call for evidence was issued in November 2021, seeking views on key design features of Landfill Tax, including the rate that applies to different materials and the circumstances in which exemptions and discounts can be claimed. At Spring Budget 2023, the government published a response to the call for evidence. This confirms the government will continue engagement with stakeholders before making further announcements in due course.

International considerations of landfill diversion policies have shown that landfill tax can be an effective complementary driver for diverting waste to better alternative treatment, as has already been shown in the UK.

Food and garden waste

The Environmental Protection Act 1990 (as amended by the Environment Act 2021) will require all local authorities and businesses in England to arrange for the separate collection of food waste for recycling at least weekly from households.

Separate collection of food and garden waste will be supported by secondary legislation and statutory guidance that will set out further details, commencement dates and requirements.

The waste sector's road to Net Zero

The majority of emissions from the waste sector are attributable to methane produced by biodegradable waste breaking down in landfill, and action to reduce these emissions will play an important part in achieving our net zero ambitions. Whilst this Call for Evidence is focussed on the near elimination of biodegradable waste being sent to landfill, it is not the only means by which the waste sector will achieve net zero.

A number of policies are in development that will seek to minimise waste from arising in the first place and increase the proportion of waste that is recovered for recycling. As announced in the [Environmental Improvement Plan](#), we will publish the new maximising resources and minimising waste programme in England in Summer 2023. The programme will set out our priorities for action across seven key sectors - construction, textiles, furniture, electronics, vehicles, food, and plastics, packaging and single-use items - to manage resources and waste in accordance with the waste hierarchy.

Reforming the way in which recyclable material is collected will be essential to increasing recycling and minimising the volume of biodegradable municipal waste sent to landfill. This will be achieved through the mandatory consistent collection and recycling of a core set of

materials (paper and card; glass; metal; plastic; food waste; and garden waste (from households only)).

It is recognised that the consistent collection of recyclable materials may not achieve the near elimination of biodegradable municipal waste sent to landfill from 2028 in isolation. Additional measures will likely be required, and this Call for Evidence is intended to ensure any government intervention to achieve this is targeted and evidence based.

There are also a number of policies in development that seek to minimise greenhouse gas emissions from the fossil (i.e. plastic) portion of the residual waste stream. To bring together the components of how the waste sector will contribute towards net zero we announced in the [Net Zero Growth Plan](#) that we will publish an addendum to the Resources and Waste Strategy later this year. This addendum will draw together how the waste sector will decarbonise.

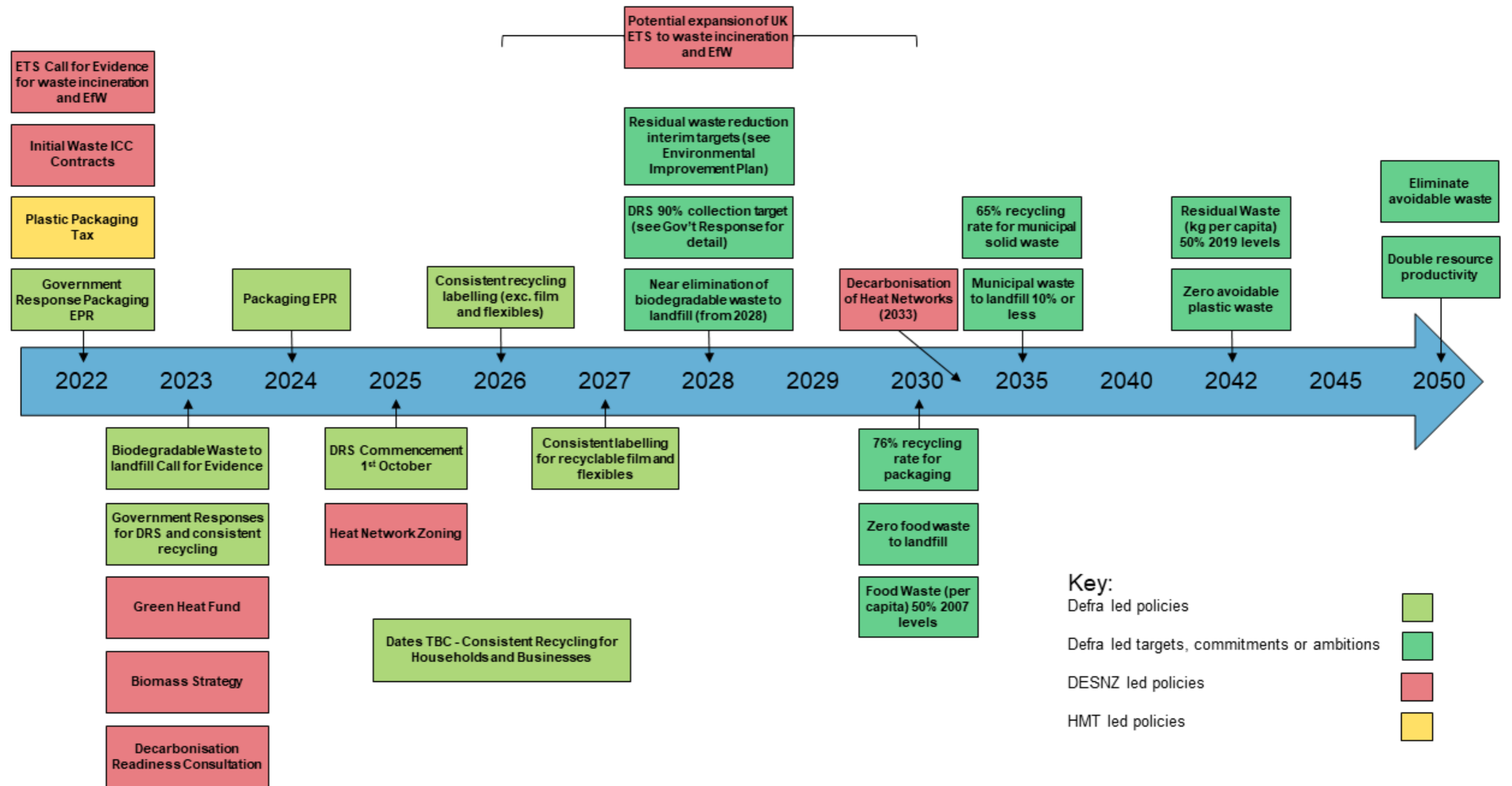
Figure 1 presents an indicative (subject to change) timeline of policies and developments that will support the waste sector's transition to Net Zero by 2050. This timeline is also listed below to ensure accessibility across this Call for Evidence

Indicative Waste Sector Roadmap to Net Zero – Government Policies, Targets, Commitments, and Ambitions

- 2022:
 - Plastic Packaging Tax (led by HM Treasury)
 - Emissions Trading Scheme Call for Evidence for waste incineration and energy from waste (led by DESNZ)
 - Initial industrial carbon capture contracts for waste (led by DESNZ)
 - Government Response published for packaging Extended Producer Responsibility (pEPR)
- 2023:
 - This biodegradable waste to landfill Call for Evidence
 - Green Heat Fund (led by DESNZ)
 - Government Responses for the Deposit Return Scheme and Consistent Recycling (the latter to be published in due course)
 - Biomass Strategy (led by DESNZ)
 - Consultation on the expansion of Decarbonisation Readiness requirements to include energy from waste (led by DESNZ)
- 2024:
 - Extended Producer Responsibility for Packaging (pEPR)

- 2025:
 - Deposit Return Scheme Commencement – proposed commencement 1st October
 - Heat Network Zoning (led by DESNZ)
- 2026
 - Consistent recycling labelling (excluding film and flexibles)
- 2027
 - Consistent recycling labelling for recyclable film and flexibles
- 2028
 - Deposit Return Scheme 90% collection target (within 3 years of operation)
 - Residual waste reduction interim targets (see Environmental Improvement Plan)
 - Near elimination of biodegradable waste to landfill from 2028
- 2030:
 - 76% recycling rate for packaging
 - Food Waste (per capita) 50% 2007 levels
 - Zero food waste to landfill
- 2033
 - Decarbonisation of Heat Networks (led by DESNZ)
- 2035
 - 65% recycling rate for municipal solid waste
 - Municipal waste to landfill 10% or less
- 2042
 - Residual Waste (excluding major mineral wastes) to be 287 kilograms per capita, equivalent of 50% of 2019 levels
 - Zero avoidable plastic waste
- 2050
 - Eliminate avoidable waste
 - Resource productivity doubled
- Relevant policies under development as of May 2023:
 - Potential expansion of the Emissions Trading Scheme for waste incineration and Energy from Waste – mid-late 2020s
 - Consistent Recycling for Households and Businesses

Figure 1 Indicative Waste Sector Roadmap to Net Zero – Government Policies, Targets, Commitments, and Ambitions



Questions

Where we ask for data or evidence, if this is numerical, i.e. data related to the composition of mixed wastes, please can you share this in a spreadsheet (.xlsm, .xlsx, or .

csv format) in as granular data as possible. For example, if you own or operate more than one landfill site and you are willing to do so, please do share data for each site.

Please submit all data on an annual basis where possible, including the year the data are drawn from. If you are able to, please include detail on the methodology used, including granularity, and any limitations on the data.

About You

Q1. Would you like your response to be confidential? Please refer to the information on confidentiality and data protection at page 5 of this document.

Yes

No

Q2. If you have answered 'Yes' above, please give your reason.

Q3. What is your name?

Q4. What is your email address?

This is optional, but if you enter your email address you will be able to return to edit your Call for Evidence response on Citizen Space at any time until you submit it. You will also receive an acknowledgement email when you complete the Call for Evidence.

Q5. Which of the options below best describes you? Please tick only one option. If multiple categories apply to you, please choose the one which best describes you and which you are representing in your response. (Required)

- Academic or research
- Business representative organisation/trade body
- Charity or social enterprise
- Community group
- Consultancy
- Distributor
- Exporter
- Individual

- Landfill operator
- Local government
 - Unitary Authority
 - Waste Collection Authority
 - Waste Disposal Authority
 - Other local government body
- Non-governmental organisation
- Product designer/manufacturer / pack filler
- Retailer including online marketplace
- Waste management company
- Other (please provide details)

Q6. If you are responding on behalf of an organisation, what is its name?

Landfill Allowance Trading Scheme

The Waste and Emissions Trading Act 2003 required the Secretary of State and the appropriate authority for each country to have a national strategy for the reduction of biodegradable waste sent to landfill. In two-tier areas⁶ of England, the Act gave waste disposal authorities the power to direct waste collection authorities to deliver their waste in a separated form. It also required authorities in two-tier areas, subject to certain exemptions, to have in place a joint strategy for the management of their municipal waste.

The Landfill Allowance Trading Scheme (LATS), set up to meet targets to reduce volumes of biodegradable municipal waste to landfill, was successful in diverting such waste before it was discontinued after the 2012/13 target year.

To help our understanding of the current extent of diversion policies, we want to hear about the policies your organisation/authority has in place to divert biodegradable waste from landfill. We are particularly interested in any case studies that could be considered to support our ambitions for the near elimination of biodegradable waste to landfill.

Q7. Does your organisation/authority have in place an active policy to minimise or avoid the landfilling of biodegradable waste?

Yes

⁶ Around 350 local authorities in England have responsibility for collection and/or disposal of household waste. About 90 of these are Unitary Authorities who are responsible for both collection and disposal. The remainder are 'two-tier' authorities where a waste disposal authority is responsible for disposing of waste collected by smaller district authorities, who are known as waste collection authorities.

No

Not applicable

If you are happy to do so, please can you provide a copy, or details of this policy.

Q8. If you do actively divert biodegradable waste from landfill, how is this waste treated?

Q9. If you do not have an active policy, does your organisation/authority have any plans to implement policies or actions to divert biodegradable waste from landfill?

Yes

No

If you are happy to do so, please provide details.

Residual waste treatment

Residual waste is predominately dealt with in four ways: incineration with energy recovery in the form of electricity and distributed heat; the production of Refuse Derived Fuel (RDF), including for export; incineration without energy recovery; and lastly, disposal in landfill. There are emerging technologies that may provide additional treatment options in the longer term through Advanced Thermal Treatment, including the conversion of residual waste to transport fuel.

We recognise that landfill provides a valuable option to ensure the continued sanitary management of waste in certain circumstances. We therefore want to understand the extent to which landfill is used as a primary or alternative disposal option and its role as part of a wider co-dependent system of waste disposal. We also want to understand the circumstances in which landfill disposal might be used in response to specific pressures, as well as seasonal fluctuations in the amount and types of biodegradable waste that might be disposed of in landfill, for example decorative items, such as pumpkins and Christmas trees, or increased food or garden waste arisings.

Q10. Do you manage biodegradable waste?

Yes

No

If your answer is no, please go to 0

Q11. If you do manage biodegradable waste, what proportion (%) of this waste do you usually send to:

- **Incineration with energy recovery (i.e. Energy from Waste (EfW))**
- **Incineration without energy recovery**
- **Landfill**
- **Anaerobic Digestion**
- **Composting**
- **Other treatment (please state)**

Q12. Can you describe any factors or issues that influence your choice of biodegradable waste disposal routes?

Q13. If you do not routinely send your biodegradable waste to landfill, how often do you use landfill as a disposal method where there is no alternative option?

Never

Sometimes (less than monthly, but at least once a year)

Often (monthly)

Very often (more than once a month)

Q14. What are the circumstances in which you have used or would consider using landfill as a contingency or emergency disposal option?

Q15. If there are any seasonal fluctuations, including seasonal novelty biodegradable wastes, that impact your waste disposal options, do you have any evidence as to the quantities and composition of these wastes, as well as how they are treated and coded before being disposed of in landfill?

Yes

No

If yes, please share the evidence and/or data.

Q16. If you manage biodegradable waste, how often do you send biodegradable waste for inter-UK disposal in landfill (i.e. from England to Scotland, Wales, or Northern Ireland)?

Never

Sometimes (less than monthly, but at least once a year)

Often (monthly)

Very often (more than once a month)

Q17. Are there specific circumstances that influence decisions to send biodegradable waste for inter-UK disposal?

Lack of available treatment capacity in England

Existing contracts

Cost effectiveness

Other (please state)

The mixed waste codes

The two mixed waste codes 20 03 01 and 19 12 12 are typically responsible for around 80-90% of landfilled municipal waste and the emissions from these waste codes are modelled using compositional analysis carried out in 2011.

In the absence of more recent data on the composition and sources of 20 03 01 coded waste, we assume that this list of waste code is used to categorise typical black bag waste from both households and businesses. The composition of 19 12 12 waste however is not as clear, although it is loosely understood that waste fines⁷ make up a large proportion of this waste code. The origin of 19 12 12 wastes is also difficult to understand due to the intermediary processes waste that is disposed of at landfill under this code will have gone through beforehand. This understanding will be important for determining policies that could be applied to municipal and non-municipal waste streams.

Given the uncertainty regarding the composition of these mixed waste codes, we are seeking any data or evidence to improve our understanding. Although a wider package of work is underway to update our understanding of the composition of wastes, we are seeking data specific to landfill through this Call for Evidence. This will allow us to enhance our modelling of the emissions of methane from landfill ahead of the completion of this other work and ensure that any policy interventions to support the near elimination of biodegradable waste to landfill are properly targeted at those wastes that contribute the most to emissions from landfill.

Q18. Do you have any evidence or data that details the composition of the 20 03 01 and 19 12 12 waste codes dating from 2011 onwards/that is less than 10 years old?

Yes

No

⁷ Fines are the smaller fractions of waste produced by any waste treatment process that includes an element of mechanical treatment

If yes, please share the evidence and/or data

Q19. Do you have a view on why significantly more 19 12 12 waste is sent to landfill than Energy from Waste (EfW)?

Yes

No

Please provide information or evidence to support your view.

As the significant majority of landfilled biodegradable municipal waste is deposited as mixed waste under the two mixed waste codes, an essential component of our approach to achieving the near elimination of biodegradable municipal waste to landfill will likely require policies that address mixed waste streams. Evidence suggests that climate change benefits and resource efficiency gains are greatest where landfill elimination policies are coupled with a requirement to sort materials. We are therefore interested in hearing your views on the feasibility of and barriers to pre-treating mixed wastes to remove biodegradable material. We would also be interested to hear of any innovations in this area that may be gaining or have the potential to gain traction as a credible method of treating residual waste.

Q20. Do you know of any innovations, solutions or ideas as to how mixed wastes could be treated or sorted, or existing sorting improved, to remove biodegradable material from these waste streams?

Yes

No

If yes, please share details, including any information as to why these innovations or solutions are not already widely adopted if applicable

Waste Fines

Waste fines are the smaller fractions of waste produced by any waste treatment process that includes an element of mechanical treatment. Trommel fines and the screening of demolition and construction waste pose a particular problem for landfills. It is understood that waste codes covering non-inert fines, soils, fluff and dust, as well as the mixed waste code 19 12 12, can act as 'catch all' codes for a range of materials that have been reduced to fragments via mechanical sorting processes. As well as organic matter, these materials can include those that require specialist handling and management. However, these are difficult to identify when mixed.

Data shows that 308,636 tonnes of waste coded as 19 10 04 – non-hazardous fluff-light fraction and dust from the shredding of metal-containing wastes - was landfilled from the

non-municipal sector in 2020⁸. This is in addition to 7.5 million tonnes of 19 12 12 coded mixed municipal waste landfilled in 2020 from the mechanical pre-treatment of waste that is considered to include trommel fines and the residue from screening and soil washing.

In addition to us wanting to enhance our understanding of the composition of mixed wastes, we want to explore the separation of waste fines from mixed waste coded 19 12 12. Establishing a separate waste code for waste fines may mean we can better focus on diverting any biodegradable material disposed of in landfill under this mixed waste code. We have included a request for data or evidence as to the composition of mixed waste coded 19 12 12 above (Q18) and would welcome views on this proposal, or other ideas so as to support enhanced management of waste fines and the means of eliminating other biodegradable wastes coded 19 12 12 from landfill.

If we do separate waste fines from other mixed wastes, then we would also welcome views as to how these should be managed at landfill sites. Whilst most materials contained within waste fines do not pose a significant environmental risk, there are certain materials, such as sulphate bearing materials, that can have a significant impact if improperly managed and can be present within waste fines. We would welcome views as to whether, following the separation of waste fines from other mixed wastes, there should; either be an acceptance of a certain content of sulphate bearing wastes within waste fines, with these wastes being disposed of in a dedicated cell; whether all waste fines should be assumed to potentially contain sulphate bearing materials and be managed accordingly; or whether there are other approaches that can offer environmental protections and be proportionate for businesses. It is already the case that gypsum-based wastes can only be disposed of in landfill cells that do not accept biodegradable material.

Q21. Do you have any evidence or data that details the composition and sources of the waste code 19 10 04: fluff-light fraction and dust from shredding of metal-containing wastes?

Yes

No

If yes, please share the evidence and/or data

Q22. Do you support the establishment of a specific waste code(s) for waste fines?

Yes

No

Please explain your view, including evidence or data to support your view if available

⁸ <https://www.data.gov.uk/dataset/d8a12b93-03ef-4fbf-9a43-1ca7a054479c/2021-waste-data-interrogator>

Q23. Do you have any evidence or data to support or oppose the use of separately engineered cells for the landfilling of waste fines only?

Yes

No

If yes, please share the evidence and/or data

Q24. Do you have any evidence or data to support or oppose the introduction of waste acceptance criteria that sets stringent controls on the amount of sulphur bearing waste present in waste fines?

Yes

No

If yes, please share the evidence and/or data

Identification of biodegradable waste and enforcement of policies

International examples of policies to eliminate biodegradable waste to landfill, as well as our own experience, have shown that simple enforcement is essential and that there must be a way to identify target wastes. Usually, a test on the properties of the waste is used to identify biodegradable material. This can include tests on total organic carbon content (TOC), density, moisture content or calorific value. Identification and diversion according to the properties of the waste will in effect require that mixed waste streams are treated prior to disposal at landfill.

In most of the countries studied, biodegradable waste has been determined by TOC content of waste, typically applied at 5% or over, when presented at the landfill.

Other ways of identifying waste materials or waste streams for diversion from landfill include list of waste codes and the targeting of specific materials or waste streams, for example biodegradable industrial sludges or rejects from paper and card recycling. These approaches however could not be practically applied to mixed waste streams.

Q25. Would you recommend a particular method by which biodegradable waste could be identified prior to disposal at landfill?

Please share any evidence or data that supports your recommendation

Q26. Are there, in your opinion, any avoidant behaviours or unintended consequences that may occur as a result of using a particular method of identifying biodegradable waste?

Please share any evidence or data that supports your view

Municipal and non-municipal wastes received at landfill

Data collection and modelling

Local Authorities report the total weight in tonnes of local authority collected waste, the weight in tonnes of that waste sent to landfill and the weight sent to waste facilities through WasteDataFlow. We therefore have good quality and reasonably reliable data on the tonnage of local authority collected waste that is landfilled. However, as outlined above, this does not provide detail regarding the composition of those wastes.

In addition, all operators of regulated waste management facilities provide the Environment Agency (EA) with details of the quantities and types of waste they deal with. The [dataset](#) covers a calendar year and holds data from around 6,000 regulated sites.

We want to understand why large tonnages of certain waste codes continue to be sent to landfill and where possible, the source and composition of this waste. We also want to understand the rationale for, or circumstances that result in biodegradable waste being sent to landfill as the ‘best overall environmental outcome’, along with the barriers to and opportunities for alternative treatment for landfilled biodegradable waste.

Municipal waste

According to data we have, the main materials from the municipal sector - not including the mixed waste codes - that were landfilled in England in 2020 are set out in Table 1.

Table 1 Municipal waste codes and tonnages

Waste Code	Description	Overall Tonnage	Tonnage that is estimated to be biodegradable
19 05 03	Off-specification compost	204,814	139,273
19 12 10	Combustible waste (refuse derived fuel)	67,394 ⁹	33,697
20 01 08	Biodegradable kitchen and canteen waste	39,846	39,846
20 02 01	Biodegradable waste	78,285	78,285

⁹ Up from 23,502 in 2019

Waste Code	Description	Overall Tonnage	Tonnage that is estimated to be biodegradable
20 03 03	Street cleaning residues	109,518	55,854
20 03 07	Bulky waste	212,405	106,202
20 01 38 19 12 07	Wood	15,478	15,478

Q27. What are the barriers to using alternative treatments for these materials other than landfill?

Please share any evidence or data that explains your view.

19 05 03 Off-specification compost

19 12 12 Combustible waste (refuse derived fuel)

20 01 08 Biodegradable kitchen and canteen waste

20 02 01 Biodegradable waste

20 03 03 Street cleaning residues

20 03 07 Bulky waste

20 01 38 + Wood

19 12 07

Q28. Do you have a view on how government could help support alternative treatments for this waste?

Yes

No

If yes, please share the evidence and/or data

Q29. Do you have any evidence or data that can help identify the materials and sources of the waste codes shown in Table 1 that denote 'biodegradable waste' and 'Off-specification compost'?

Yes

No

If yes, please share the evidence and/or data

Bulky waste

The [EA issued guidance in 2022](#) that waste upholstered domestic seating should be assumed to contain Persistent Organic Pollutants (POPs) and that it must be managed as POPs waste with immediate effect. This means that it must be incinerated and not prepared for reuse, recycled or landfilled, including the landfilling of segregated items of seating waste, mixed waste containing items of upholstered domestic seating waste, and shredded or broken waste and trommel fines resulting from treatment of this waste.

Given the requirement that items containing POPs are incinerated and not sent to landfill, they are outside of the scope of this Call for Evidence. We are therefore interested in bulky waste that will contain biodegradable materials, such as wood and textiles but which is not subject to this requirement and how this could be diverted from disposal at landfill.

Q30. Do you have any evidence or data on how much non-POPs containing biodegradable bulky waste is sent for disposal in landfill?

Yes

No

If yes, please share the evidence and/or data

Q31. How can government support the movement of these materials for treatment further up the waste hierarchy?

Non-municipal waste

Although we have good quality data for local authority collected waste, data from the other non-municipal sectors remains difficult to estimate owing to data limitations and data gaps. Although the introduction of digital waste tracking will in time close this data gap, we need to have a better understanding in the meantime of the reasons why these non-municipal wastes still go to landfill, its composition and where it originates from, including any intermediary processes before it presents at landfill.

Waste data interrogator gives us an estimate of the materials and amounts of non-municipal waste that are sent to landfill. The main biodegradable materials that were sent to landfill from the non-municipal sector by category in 2020 are set out in Table 2.

Table 2 Non-municipal waste codes and tonnages

Description	Tonnage
Food effluent and biodegradable industrial sludges¹⁰	658,682
Non-inert fines ¹¹	308,636
Mixed residual waste ¹²	215,690
Miscellaneous combustible¹³	100,213
Commercial and industrial paper and card ¹⁴	97,283
Commercial/industrial food; abattoir waste¹⁵	66,577

Q32. Do you have any views, evidence or data that explains why the materials shown in Table 2 are sent to landfill as opposed to alternative treatment higher up the waste hierarchy?

Food effluent and biodegradable industrial sludges

Non-inert fines

Mixed residual waste

Miscellaneous combustible

Commercial and industrial paper and card

Commercial/industrial food; abattoir waste

¹⁰ The main tonnages comprise sludges from water clarification, materials unsuitable for consumption or processing, sludges from treatment of urban wastewater, landfill leachate and sludges from physico/chemical treatment. The remaining tonnage is made up in the most part from sludges resulting from various processes

¹¹ 19 10 04: fluff-light fraction and dust other than those mentioned in 19 10 03

¹² Mostly comprised of 19 02 03: Premixed waste composed only of non-hazardous waste and 19 08 01: Screenings

¹³ Non-hazardous bituminous mixtures accounted for 47,818 tonnes of this total in 2019

¹⁴ Mechanically separated rejects from pulping of wastepaper and cardboard

¹⁵ Wastes from human or animal health care and/or related research (except kitchen and restaurant wastes not arising from immediate health care)

Q33. How can government support the movement of these materials for treatment further up the waste hierarchy?

Q34. Do you have any evidence or data that details the composition of materials within each category of waste received at landfill as listed above and their origins/sources?

Yes

No

If yes, please share the evidence and/or data

Q35. Do you have any evidence or data that details the composition of the mixed non-municipal waste code:

19 02 03 – premixed waste composed only of non-hazardous waste

19 08 01 – Screenings

Q36. Do you have any evidence or data that details the origins/sources of the mixed non-municipal waste codes?

Yes

No

If yes, please share the evidence and/or data

The five key biodegradable materials recommended for elimination from landfill by the Climate Change Committee

The CCC recommended that five key biodegradable materials are targeted for diversion from disposal in landfill: food, garden waste, wood, paper and card and textiles. Separate collection of food and garden waste as well as paper and card will mean that a proportion of these wastes will be removed from the municipal residual waste stream which is typically landfilled as mixed waste.

Legislation is already in place that make it a common condition on permit holders that they should not landfill or incinerate paper, metal, plastic and glass that has been separately collected for recycling or reuse, unless the permit allows it and it delivers the best environmental outcome for any residual waste arising from that treatment. To support the consistent collection of recyclable materials, the Environment Act 2021 amends section 45A of the Environmental Protection Act 1990 to change the requirements on waste collection authorities. Waste collection authorities will have to collect paper and card, metal, glass, plastic, food waste and garden waste separately from residual waste for

recycling and composting from all households. There are similar requirements on relevant non-domestic premises (such as schools and hospitals) and businesses to make arrangements for the collection of these waste streams (except garden waste) and to present their waste in accordance with these arrangements. We are setting out in regulations what counts as recyclable waste in each waste stream. There is however the potential to expand this list.

We do not intend to affect the configuration of household waste collections through this Call for Evidence.

Table 3 shows the estimated tonnages of single unmixed waste streams containing these materials to landfill in 2020 from both the municipal and non-municipal sectors.

Table 3 Five key biodegradable materials and tonnages

Material	Tonnage		
	Municipal	Non-municipal	Total
Wood	15,478	12,619	28,097
Paper and card	732	97,283 ¹⁶	98,015
Textiles	196	2,921	3,117
Food	46,305	7,964 ¹⁷	54,269
Garden waste	78,285 ¹⁸	0	78,285

Q37. Are you aware of any barriers to expanding the list of separately collected wastes that are prohibited from disposal at landfill (or incineration) without some form of treatment process to include wood, card, textiles, food, and garden waste?

Yes

No

Please explain your answer

¹⁶ Majority is mechanically separated rejects from pulping of waste paper and cardboard

¹⁷ Consists of material unsuitable for consumption or processing. Does not include tonnages of food effluent and biodegradable sludges or abattoir wastes.

¹⁸ Does not include off-specification compost

Q38. In addition to the materials detailed in Q37, are there any other potentially recyclable wastes which, when separately collected, could be prohibited from being sent to landfill (or incineration) without some form of treatment process?

Yes

No

If so, please provide any evidence to support this, including details of alternative treatment of these materials

Textiles municipal waste

A 2017 national municipal waste composition analysis for England¹⁹ found that over 1 million tonnes of textiles were disposed of in household and commercial municipal residual waste. Table 4 sets out the tonnages per product category. This material is treated either through Energy from Waste or sent to landfill. We expect the majority of municipal residual textiles waste to be found in the two mixed waste codes, 20 03 01 and 19 12 12, but there is a lack of data on this and where the waste comes from.

Table 4 Textile wastes and tonnages

Material	Tonnage		
	Household municipal residual	Commercial municipal residual	Total
Clothing	280,609	111,962	392,571
Shoes, bags, belts	164,919	57,838	222,757
Other non-clothing textiles	332,252	96,681	428,933
Overall total	777,780	266,481	1,044,261

Q39. Which of the two mixed waste codes (20 03 01 and 19 12 12) are most household and commercial municipal textiles landfilled under?

¹⁹ WRAP (2017) [National Municipal Waste Composition for England](#)

Q40. For textiles recorded under the 19 12 12 waste code arriving at landfill, where does this usually come from, e.g., a Household Waste Recycling Centre (HWRC), or a Materials Recovery Facility (MRF)?

Q41. Can you provide any data on the biodegradable composition of textiles in the two mixed waste codes?

Yes

No

If yes, please share the data

Q42. Based on your experience, what is the general quality of textiles found in these two mixed waste codes? If you find there is a mix of quality, please detail a percentage against each category.

Very poor quality and contaminated – unusable (%)

Poor quality but not contaminated – in need of repair (%)

No view

Good quality – usable, but showing signs of wear/use (%)

Very good quality – like new (%)

Q43. Is there any difference, in your experience, between the quality and type of household and commercial municipal textiles waste?

Yes

No

Please explain your view

Q44. Do you have any suggestions for incentives government could introduce to divert textiles, particularly biodegradable textiles, from landfill and for treatment that offers better environmental outcomes in accordance with the waste hierarchy?

Q45. Should businesses be required to present textiles waste separately for collection?

Yes

No

Please explain your answer

Q46. In your experience, what would be the opportunities and difficulties associated with this?

Do you have any evidence to support your response?

Interaction with other waste policies

There are a number of policies and developments in the waste sector that will contribute to our transition to a Net Zero economy. These policies and the timing of their implementation will have a significant impact in reducing the amount of biodegradable waste that goes to landfill. Most notably are [consistency in household and business recycling](#); our [Residual Waste Reduction Target](#); the [Biomass Strategy](#), including the government's [priority use principles for biomass](#); and the [potential expansion of the UK Emissions Trading Scheme \(ETS\)](#) to include the incineration of waste with and without energy recovery (including Advanced Thermal Treatment (ATT)/Advanced Conversion Technology (ACT)), which will seek to minimise greenhouse gas emissions from the fossil (i.e. plastic) portion of the residual waste stream. Further policy intervention to achieve the near elimination of biodegradable waste to landfill will be in addition to these policies.

This Call for Evidence presents us with the opportunity to seek your views on any potential additional policies that could be effective in increasing diversion of biodegradable waste beyond current levels. At the same time, we recognise that financial disincentives increase cost burden and are not always the most cost-effective policy instrument.

We are interested in understanding to what extent further policy intervention may be required and what form this could take.

Q47. Based on your perspective, to what extent do you think that the government's committed policies, taken collectively, will achieve the near elimination of biodegradable waste to landfill?

Not at all (no change in current situation)

Somewhat (will divert some (less than half) biodegradable waste going to landfill, but not all)

Will ensure that a significant majority (more than half, but less than 90%) of biodegradable waste, for which there are alternative treatment options, is diverted from landfill

Completely (will divert nearly all (more than 90%) biodegradable waste, for which there are alternative treatment options, from landfill)

Please explain your view

Q48. Do you have a view on alternative bio-recycling routes for the diverted biodegradable waste other than anaerobic digestion and composting in line with the government's priority use principles for biomass?

Yes

No

If yes, can you provide evidence to support your view?

Q49. Are there any instruments you could suggest that would be effective in eliminating biodegradable waste to landfill?

Yes

No

If yes, please can you explain your thinking, including what financial mechanism would be appropriate and how this could work

Timing of policies to eliminate biodegradable waste to landfill

International case studies suggest that the early announcement, or phasing in, of policies to support the near elimination of biodegradable waste to landfill is necessary to allow for the sector to develop alternative infrastructure to recycle or recover diverted waste.

We would like to hear your views on the merits of a phased approach to implementation, taking account of consistent collections and recycling and other policies. For instance, should policies that target municipal waste only be implemented first, before expanding the scope of policies out to non-municipal waste? As part of a phased approach, are there materials that could be prioritised sooner than others because the initial gas yield once in landfill is high, offering similarly high emission savings? Conversely, are there materials that could be deferred due to their slower degradability?

Government recognises there is a balance between needing to act and the necessity of developing appropriate infrastructure to ensure alternative treatment for biodegradable waste diverted from disposal at landfill. We would therefore welcome views on any barriers to introducing any policies sooner than 2028, such as to 2026.

Q50. Do you have any thoughts or evidence as to how policy interventions should be sequenced so as to achieve the near elimination of biodegradable waste to landfill? Please chose one option.

Focus on municipal waste only

Focus initially on municipal waste before expanding policies to non-municipal waste

Focus on non-municipal wastes only

Focus on all biodegradable waste

Target specific wastes (municipal and non-municipal) now that can be diverted to alternative treatment

Other

Please explain your answer

- Q51. Having considered the timing of other policies, are there circumstances that may arise as a result of interaction with these policies that you would like us to be alert to?**
- Q52. Notwithstanding your response to Q50Q50, in achieving the near elimination of biodegradable waste to landfill, do you have any evidence or thoughts of materials or waste codes that could be targeted before others, or should all biodegradable municipal waste be targeted at the same time?**
- Q53. Are there materials that should be considered at a later stage or for exemption because there is no possible current or likely future alternative means of disposal for that waste?**
- Q54. Are you aware of any barriers to bringing forward implementation of policies to achieve the near elimination of biodegradable waste to 2026, taking account of necessary lead in times to prepare the sector?**
- Q55. Do you have a view as to whether we can and should seek to align biodegradable waste to landfill policy scope, timing and implementation in England to those being implemented across the UK?**

Yes

No

If yes, please explain your view and provide evidence and data if available to support your reasoning.

Waste Infrastructure

In diverting biodegradable waste from landfill we need to ensure there is sufficient anaerobic digestion, recycling and reprocessing capacity for the diverted (segregated) waste.

We recognise that there may be certain materials, such as unsorted mixed wastes, for which recovering energy through residual waste treatment (such as incineration or conversion to fuel) is the only viable alternative treatment to landfill. Government is

working to support the decarbonisation of residual waste treatment to support our transition to a Net Zero economy, including through the [Waste Industrial Carbon Capture Business Model](#) and potential expansion of the UK ETS.

To support the diversion of biodegradable waste from landfill we would like to see sufficient alternative treatment capacity that ensures the best overall environmental outcome for the diverted waste.

The Green Gas Support Scheme (GGSS), launched by the government in 2021, will increase capacity in the anaerobic digestion sector by providing financial incentive for new anaerobic digestion biomethane plants, with the aim of increasing the proportion of green gas in the gas grid. This increased capacity will help support management of separately collected food waste from households and businesses.

We are interested in understanding if there is anything additional that government can, or should do, to support the development of sufficient capacity to manage biodegradable waste diverted from landfill.

We would also welcome views on ways in which government could support the prevention of biodegradable waste from arising in the first place.

Q56. Do you have a view on how can government support the development of infrastructure required to manage biodegradable waste diverted from landfill?

Q57. Do you have a view on how infrastructure development might impact on the potential phasing in of policies to eliminate biodegradable waste to landfill?

Q58. Do you have a view on how government could support the prevention of biodegradable waste from arising in the first place?

Yes

No

If yes, please explain your answer

Soils to landfill

In 2020 'waste soils' made up 58% and 'mineral wastes' 6% of the tonnages received at landfills across the UK, making up the largest proportion of material to landfill by some margin when compared to the next largest tonnages.

We recognise that large tonnages of soil and soil like material are recorded for disposal in landfill, which for the purposes of waste classification can be labelled as 'active'.

Government policy is to encourage the avoidance of waste, the reuse of soils and prevention of landfilling. As set out in the Environmental Improvement Plan, we are working to begin development of a Soil Re-Use and Storage Depot scheme to help

prevent soil that would otherwise be classified as waste going to landfill and encourage remediation and re-use of soil.

The purpose of this Call for Evidence is to focus on diverting from landfill those materials that offer greater CO₂e savings and for which there may be alternative treatment options. Therefore, given the existence of other government policy and work to divert soil from landfill we propose at this point that soils (both topsoil and subsoil) and mineral wastes are excluded from the scope of policies to achieve the near elimination of biodegradable waste to landfill.

Q59. Do you agree that soils and mineral wastes are excluded from the scope of policies to achieve the near elimination of biodegradable waste to landfill (with other cross-government policies focussed on the prevention and reuse of soils and mineral wastes, where appropriate)?

Agree

Disagree

Please share your views and any evidence or data that supports your reasoning

Cost of achieving the near elimination of biodegradable waste to landfill

We appreciate that achieving the near elimination of biodegradable waste to landfill will likely result in a cost to businesses and potentially local authorities. We would therefore like to gather any views or evidence as to what this may be to help formulate and assess policy options.

Q60. Are you aware of any potential costs that may arise as a result of the near elimination of biodegradable waste to landfill that should be taken into account?

Yes

No

If available, could you provide evidence to support your answer?

Q61. Do you envisage any unintended consequences that the government should seek to avoid when developing policies to achieve the near elimination of biodegradable waste being sent to landfill?

Yes

No

If yes, please explain your answer

Any additional information or views to share

Q62. If you hold any evidence, data, views, or thoughts outside of direct requests for evidence, data and views contained in this document that you believe will help us in our ambition to achieve the near elimination of biodegradable waste to landfill, please add this here.

Annex A: Supplementary Section: The future of landfill

Active and recently closed landfills continue to generate high levels of methane as a result of the decomposition of biodegradable waste for around 10-15 years after waste is deposited, before declining to much lower levels that are steadily generated over an extended period of time. Additional revenue can be generated from a landfill by collecting the landfill gas and using it to produce electricity, which is then sold to the National Grid. Government financial subsidy has historically been available for this practice in the form of Renewal Obligation Certificates (ROCs).

We appreciate that the near elimination of biodegradable waste to landfill and wider government policy around waste and resource efficiency will mean that the landfill sector and the future role of landfill will undergo significant change.

In this section we are not looking for answers to questions but would be interested in identifying key stakeholders who would like to be considered for inclusion in roundtable or other discussions in the near future.

As has been shown, the practice of landfilling biodegradable waste has followed a downward trend since 2010 which will continue following implementation of further diversion policies. This means that over time, less gas will be available for electricity generation as the landfill ages and the amount of gas emitted decreases.

In light of these changes, we are considering:

- How to best utilise the economic benefit of old landfill sites and what barriers and advantages there may be
- The potential for the co-location of economic activity at landfill sites (active and closed)
- What will happen to landfill sites as the near elimination of biodegradable waste is achieved. Including how these sites will be filled and maintained until they stop accepting new waste and through their aftercare period; and
- The role for landfill in the future. For example, as well as being a required disposal option for those wastes that cannot be otherwise managed, is there a strategic need for landfill sites and if so, how will these be managed and maintained and by who.

Q63. Would you be interested in taking part in any conversations around the future role of landfill and other topics relevant to landfill policy?

Annex B: Additional Background

International action to reduce global methane emissions is critical to limiting global mean temperature rise to 1.5°C. Methane's global warming potential (GWP) is ~80 times greater per tonne emitted than carbon dioxide over 20 years, and 25 times greater over 100 years. Compared to carbon dioxide, methane has a considerably shorter atmospheric lifetime of 12 years rather than centuries²⁰. This means that taking action can rapidly reduce atmospheric concentrations of methane, and in turn rates of warming in the near term.

In the absence of oxygen (below the surface), anaerobic degradation of biodegradable waste deposited in a landfill produces landfill gas that is predominantly comprised of methane and carbon dioxide. In 2021, landfill gas from closed and operational landfills across the UK was estimated to emit 13.6 Mt CO₂e, which is ~72% of the total emissions from the Waste Sector²¹.

The definition of biodegradable municipal waste

Biodegradable waste is defined in section 21(1) of the Waste and Emissions Trading Act 2003 as “any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste, and paper and paperboard”.

Section 21(3) of The Waste and Emissions Trading Act 2003 defines municipal waste as:

- a) mixed waste and separately collected waste from households, including paper and cardboard, glass, metals, plastics, bio-waste, wood, textiles, packaging, waste electrical and electronic equipment, waste batteries and accumulators, and bulky waste, including mattresses and furniture; and
- b) mixed waste and separately collected waste from other sources, where such waste is similar in nature and composition to waste from households.

But municipal waste does not include waste from production, agriculture, forestry, fishing, septic tanks and the sewage network and treatment, including sewage sludge, end-of life vehicles or waste generated by construction and demolition activities.

The [retained EU law version of Commission Decision 2000/532/EC](#), establishing a list of wastes (“the waste list”) is used to catalogue wastes. It is divided into 20 separate chapters that are grouped according to industry process or waste type, which are in turn subdivided into narrower categories. The waste list also denotes those wastes that could be or are considered hazardous, depending on their composition or properties.

²⁰ https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf

²¹ Emissions from Energy from Waste are not currently included in the Waste Sector for the purposes of reporting to the National Inventory

In the [UK statistics on waste publication](#), figures on biodegradable municipal waste to landfill are presented. For this reporting obligation, the UK have agreed a set of list of waste codes to represent 'municipal waste'. There are some minor differences between the codes used by each country as set out in the UK statistics on waste publication. The list of codes includes those waste streams coded:

- Chapter 20: Municipal wastes including separately collected fractions
- Some Chapter 19 codes: Wastes from waste management facilities, off-site wastewater treatment plants and the preparation of water intended for human consumption and water for industrial use; and
- A small number of Chapter 15 codes representing waste packaging.

Mixed municipal wastes collected from households and commercial businesses coded as 20 03 01, as well as sorting residues from processing both mixed municipal and commercial waste coded as 19 12 12 are included in tonnages for municipal waste. The figures for biodegradable municipal waste to landfill includes mirror codes that denote hazardous waste.

Biodegradable waste to landfill policies in the Devolved Administrations

As waste is a devolved policy, the devolved nations are working individually on policies to eliminate biodegradable waste from landfill. International examples suggest that the timing and scope of similar policies in the rest of the UK should be considered to avoid waste moving from landfill in one country to another.

Scotland

Scotland will ban the landfilling of biodegradable municipal waste from 31 December 2025. Ahead of this, the Scottish Government, through Zero Waste Scotland, is working with Scottish local authorities to support them in securing alternative solutions for their residual waste. The Scottish Government has also committed to extend the forthcoming ban to include biodegradable non-municipal wastes.

The Scottish Government recently consulted on a Circular Economy Bill²² and Waste Route Map²³, setting out the actions that must be taken to meet Scotland's waste targets, which include recycling 70 per cent of all waste and landfilling five per cent of remaining waste ending up in landfill by 2025. The Waste Route Map consultation proposed the development of a Residual Waste Plan by 2024 to ensure the best environmental outcome

²² [Delivering Scotland's circular economy: a consultation on proposals for a Circular Economy Bill - Scottish Government - Citizen Space](#)

²³ [Delivering Scotland's circular economy: A Route Map to 2025 and beyond - Scottish Government - Citizen Space \(consult.gov.scot\)](#)

for materials and set the strategic direction for management of residual waste to 2045, and to bring this area in-line with net zero targets.

Wales

The Welsh Government, in its 2010 waste strategy (Towards Zero Waste), set a target of less than 5% landfill by 2025 and 'zero waste' (no residual unrecycled waste) by 2050. Net Zero Wales Carbon Budget 2 (2021-2025) commits the Welsh Government to reduce biodegradable waste to landfill to as close to zero as possible by 2025, by encouraging behaviour change and improved waste management, and by 2025, to reduce greenhouse gas emissions from landfill sites by 19%, compared to 2019. Steps to achieve this include support to Local Authorities to divert municipal waste from landfill (the landfill rate for municipal waste was 5% in 2021-22), and to introduce the Business, Public and Third Sector Recycling Regulations that aim to further increase recycling rates and which will ban specified waste streams from landfill and energy from waste.

Northern Ireland

The Northern Ireland Assembly are exploring options for the banning of biodegradable waste to landfill. The recent Climate Change Act (Northern Ireland) 2022 requires a Climate Action Plan to be developed as the delivery vehicle for Northern Ireland's first carbon budget. The waste sector will be required to reduce emissions by 43% within this time frame (to 2027). The largest portion of emissions identified are emitted from managed waste disposal sites (landfill). In 2020 these sites were responsible for 621ktCO_{2e} of the total 799ktCO_{2e} emitted by the sector. The Department of Agriculture, Environment and Rural Affairs of Northern Ireland (DAERA) has identified that reducing or banning biodegradable waste to landfill whilst enhancing waste collection services at households and businesses will contribute to the waste sector meeting its reduction target for the first carbon budget. In 2021/22, Northern Ireland sent over 140,000 tonnes of biodegradable waste to landfill.

In Northern Ireland, households have had a comprehensive collections service for organic waste for several years. That which is collected is sent for composting with a small portion sent to anaerobic digestion. If biodegradable waste was banned from entering landfill, capacity does exist in both composting and anaerobic digestion to manage the additional tonnages locally. Any ban would be accompanied by extensive communications around waste prevention and encouraging any waste that is generated to be placed in the correct receptacle.

Consultee Feedback on the Online Survey

Dear Consultee

Thank you for taking your time to participate in this online survey. It would be appreciated, if you can provide us with an insight into how you view the tool and the area(s) you feel is in need of improvement, by completing our feedback questionnaire.

Q64. Overall, how satisfied are you with our online consultation tool?

Very satisfied

Satisfied

Neither satisfied nor dissatisfied

Dissatisfied

Very dissatisfied

Don't know

Please give us any comments you have on the tool, including suggestions on how we could improve it.