Dadansoddi ar gyfer Polisi

YMCHWIL GYMDEITHASOL Y LLYWODRAETH

GSR

GOVERNMENT SOCIAL RESEARCH

Analysis for Policy

Llywodraeth Cymru
Welsh Government

SOCIAL RESEARCH NUMBER:
69/2023
PUBLICATION DATE:
06/07/2023

An Independent Review of the Landfill Disposals Tax (Wales) Act 2017

Mae'r ddogfen yma hefyd ar gael yn Gymraeg.

This document is also available in Welsh.

 Digital ISBN 978-1-83504-292-2

Title: An Independent Review of the Landfill Disposals Tax (Wales) Act 2017
Subtitle: Final Report

Author(s): Joe Hudson, Alexa Cancio, Sam Taylor, Paula Orr, Leyla Lugal, Petra Bistričić, Rhiannon Lee

Full Research Report: Joe Hudson, Alexa Cancio, Sam Taylor, Paula Orr, Leyla Lugal, Petra Bistričić, Rhiannon Lee; (2023). *An Independent Review of the Landfill Disposals Tax (Wales) Act 2017*. Cardiff: Welsh Government, GSR report number 69/2023.
Available at: https://www.gov.wales/independent-review-land-disposals-tax-wales-act-2017

For further information please contact:
Local Government and Public Services Research
Social Research and Information Division
Welsh Government
Cathays Park
Cardiff
CF10 3NQ
Email: research.publicservices@gov.wales

Table of contents

List of tables

List of figures

Glossary

The key acronyms and key words used throughout the report are outlined and identified in Table 1Table 1.

Table 1: Glossary

Acronym/Key word	Definition
Chartered Institute of Wastes Management (CIWM)	A professional membership organisation for individuals in the sustainability, resources and waste management sector.
Commercial and Industrial (C&I) waste	Waste generated by businesses, production units and offices.
Construction and Demolition (C&D) waste	Waste produced by the construction and demolition of buildings and infrastructure.
Department of Agriculture, Environment and Rural Affairs (DAERA)	DAERA has responsibility for food, farming, environmental, fisheries, forestry and sustainability policy, and the development of the rural sector in Northern Ireland.
Department for Environment, Food and Rural Affairs (Defra)	Department responsible for environmental protection, food production and standards, agriculture, fisheries, and rural communities in England.
Deposit Return Scheme (DRS)	A recycling scheme where consumers pay a deposit on a single-use container, which can be reclaimed upon return of the empty container.
UK Emissions Trading Scheme (ETS)	A market-based mechanism to reduce greenhouse gas emissions based on the principle of 'cap and trade'. A cap is set on the total of amount of greenhouse gases that can be emitted by sectors covered by the scheme. Within the cap, participants can trade emission allowances as needed.
Energy from Waste (EfW)	EfW involves taking waste and turning it into a usable form of energy (such as electricity, heat and transport fuels). This is commonly achieved through incineration.
Environment Agency (EA)	The EA is a non-departmental public body with responsibilities related to the protection and enhancement of the environment in England.
European Waste Catalogue (EWC)	The EWC provides a list of waste descriptions, organised by classification codes for common types of waste

Acronym/Key word	Definition
Extended Producer Responsibility (EPR)	An environmental policy approach in which a producer's financial responsibility for a product is extended to the post-consumer stage of a product's life cycle.
HM Revenue and Customs (HMRC)	Department responsible for the collection of most taxes, payment of state support, and administration of regulatory regimes in the UK, including the national minimum wage and issuance of national insurance numbers.
Incinerator Bottom Ash (IBA)	A form of ash produced following the combustion of waste in an incinerator. The composition of IBA varies depending on waste composition but can contain materials including metals and concrete.
Landfill Allowances Scheme (LAS)	Scheme introduced by the Welsh Government in June 2004 to enable Wales to meet its share of the Landfill Directive targets of reducing the amount of Biodegradable Municipal Waste being sent to landfill. https://www.legislation.gov.uk/wsi/2004/1490/regulation/1/made
Landfill Tax (LfT)	The Landfill Tax Regulations 1996 were introduced in the UK with the primary purpose of reducing the disposal of waste to landfill and encouraging more sustainable waste management outcomes. Following devolution, the Landfill Tax now operates in England and Northern Ireland.
Landfill Disposals Tax (LDT)	In Wales, The Landfill Disposals Tax is paid when waste is disposed of to landfill and is charged by weight. The Landfill Disposals Tax replaced UK Landfill Tax in Wales from April 2018.
Landfill Disposals Tax Community Scheme (LDTCS)	This references the Scheme published on 28 March 2018 that is the basis of the grant programme and required by the Landfill Disposals (Wales) Act 2017.[i] It is the topic of this review (as set out in Section 92 of the Act).
Landfill sites	An area of land in which waste is disposed. Some sites are located in disused mines or quarries.
Landfill site operators	Registered landfill site operators who are permitted to run landfill sites in Wales.
Legislation	A law or a set of laws that have been passed by a Parliament.

Acronym/Key word	Definition
Local authority (LA)	An organisation that is officially responsible for many public services and facilities in a particular area.
Mechanical Biological Treatment (MBT)	A waste processing facility that combines a sorting facility with a form of biological treatment such as composting or anaerobic digestion.
Material Recycling Facility (MRF)	A processing plant for recyclable material.
Natural Resources Wales (NRW)	A Welsh Government sponsored body which ensures that the natural resources of Wales are sustainably maintained, enhanced and used.
Office for Budget Responsibility (OBR)	Monitors UK public sector finances and provides independent economic forecasts.
Retail Price Index (RPI)	A measure of inflation on the variation in prices of retail goods and items published monthly by the Office for National Statistics
Revenue Scotland	A non-ministerial department of the Scottish Government responsible for collecting and managing Scotland's devolved taxes.
Scottish Environmental Protection Agency (SEPA)	Scotland's principal environmental regulator, protecting and improving Scotland's environment.
Scottish Landfill Tax (SLfT)	Scottish Landfill Tax is a devolved tax on the disposal of waste to landfill. The Scottish Landfill Tax replaced UK Landfill Tax in Scotland from 1 April 2015, following the passage of the Scotland Act 2012 and the subsequent Landfill Tax (Scotland) Act 2014.
United Resource Operators Consortium (UROC)	A trade body which informs, represents and supports independent operators within the waste and recycling sector.
WasteDataFlow	The web-based system for municipal waste data reporting by UK local authorities to government.
Welsh Environmental Services Association (WESA)	A trade body representing the Welsh resource and waste management industry.
Welsh Local Government Association (WGLA)	An organisation representing the interests of local government and promoting local democracy in Wales.

Acronym/Key word	Definition
Welsh Revenue Authority (WRA)	Collects and manages the Land Transaction Tax and the Landfill Disposals Tax in Wales.
Waste Resources Action Programme (WRAP)	A British registered charity that works with businesses, individuals and communities to achieve a circular economy.

1. Introduction

Project background

1.1 Eunomia Research and Consulting ('Eunomia') was commissioned by the Welsh Government to independently review the Landfill Disposals Tax (LDT) to assess its effectiveness by considering any lessons learned since its implementation. The research covers the period September 2017 to March 2023.

1.2 Until now, there has not been an independent review of LDT in Wales. This research seeks to identify what impacts can be directly attributed to LDT. This review also provides the opportunity to compare the outcomes with other UK countries and relevant international comparators.

1.3 HM Revenue and Customs (HMRC) published a review in 2014 that sought to understand the impact of the Landfill Tax (LfT) in the UK.[1] The research was based on 65 qualitative interviews with stakeholders across the waste management sector. Interviewees reported that the LfT was a driver for the fall in landfill demand and the rise in demand for alternative waste treatment options. The research also found that the tax was a driver for waste crime. HMRC did not undertake further work to assess the impact of LfT. In 2021, HM Treasury published a Call for Evidence on aspects of LfT.[2] The summary of responses was published in March 2023 and findings from the Call for Evidence are outlined within sections 3, 4 and 5 of this report.[3]

Landfill tax background

1.4 The Landfill Tax Regulations 1996 were introduced in the UK with the primary purpose of reducing the disposal of waste to landfill and encouraging more sustainable waste management outcomes. It was the first tax in the UK that had an explicit environmental purpose.[4] Tax rates were set annually in the Budget. In the

[1] HM Revenue and Customs (2014). Qualitative Research into Drivers of Diversion from Landfill and Innovation in the Waste Management Industry
[2] HM Treasury (2021). Landfill Tax Review: call for evidence
[3] HM Treasury (2023). Summary of Responses to the Call for Evidence on aspects of Landfill Tax
[4] House of Commons Library (2009). Landfill tax: introduction & early history

2009 Budget, the UK Government stated that it would continue to increase the standard rate of tax by £8 a tonne each year at least until 2013, to reduce reliance on landfill as a method of waste disposal. Since 2014, the rates have been set to rise on an escalator linked to the Retail Price Index (RPI) to align with projected inflation.

1.5 The tax was devolved to Wales by way of the Landfill Disposals Tax (Wales) Act 2017. Wales was given revenue raising powers through the Wales Act 2014.

1.6 There are three rates of LDT in Wales:

- lower rate for largely inert materials (£3.25/tonne, FY 2023/24);
- standard rate for all other material (£102.10/tonne, FY 2023/24); and
- unauthorised disposals rate for taxable disposals made at places other than authorised landfill sites (£153.15/tonne, FY 2023/24).

1.7 For waste disposed of in authorised landfill sites, the standard rate applies 'unless the material being disposed of consists entirely of one or more qualifying materials, or is a qualifying mixture of materials, in which case the lower rate is charged.'[5] Lower rate materials include rocks and soils, ceramic or concrete material, minerals, furnace slags, ash, low activity inorganic compounds, calcium sulphate, and calcium hydroxide and brine.[6]

1.8 For waste placed in an unauthorised landfill site, the unauthorised disposals tax rate applies. The unauthorised disposals rate is set higher than the standard rate (150 per cent of the standard rate) as an additional financial deterrent for individuals or organisations seeking to dispose of waste illegally.

1.9 The approach to setting tax rates has been guided by five tax principles and the objective to reduce landfill disposals in Wales.[7,8] Delivering stability and certainty for

[5] Welsh Government (2023). Determining the amount of Landfill Disposals Tax payable
[6] UK Government Legislation (2017). Landfill Disposals Tax (Wales) Act 2017
[7] Welsh Government (2021). Explanatory Memorandum to The Landfill Disposals Tax (Tax Rates) (Wales) (Amendment) Regulations 2021
[8] The five tax principles are: raising revenue to support public services as fairly as possible; helping deliver wider fiscal and policy objectives, including jobs and economic growth; being simple, clear and stable; engaging with taxpayers and wider stakeholders; contributing directly to the Well-being of Future Generations Act goal of creating a more equal Wales.

taxpayers (the landfill site operators) and the wider waste industry has also been a key factor in setting the rates to date.

1.10 LDT is administered and collected by the Welsh Revenue Authority (WRA) and provides a substantial revenue stream for the Welsh Government.

1.11 The role of landfill is defined within Wales' latest waste strategy document, 'Beyond Recycling'.[9] Published in March 2021, it affirms the commitment to a more circular economy where resources are used for as long as possible and waste is avoided. A key strategic aim is to reduce the amount of waste sent to landfill (in particular, zero landfill of biodegradable waste as set out in Net Zero Wales Carbon Budget)[10], in order to meet net zero commitments. However, landfill will likely remain a necessary outlet for some 'difficult' waste streams.

Project aims and research questions

1.12 The aim of the project was to review the effectiveness of LDT and consider any lessons learned since its implementation.

1.13 This review aimed to answer two high-level research questions:

- What impact have LDT rates had on behaviours in the waste sector (including unauthorised disposals)?
- To what extent has LDT legislation (i.e. other than tax rates) influenced behaviours?

1.14 The tax sits alongside a wide variety of policy instruments all aiming to deliver Wales towards a more circular economy. This presents complexity for the research and makes attributing the individual impact of LDT particularly challenging.

1.15 The detailed research questions (set out in Table 2) were used to guide the review. The findings to these research questions and their corresponding sub-research questions (Appendix D) are presented in the Key Findings (sections 3, 4 and 5).

[9] Welsh Government (2021). Beyond Recycling
[10] Welsh Government (2021). Net Zero Wales Carbon Budget 2 (2021-25)

Table 2: Research questions

Question type	Research question
Impact	A1 Has the approach taken to date to raise the standard and lower rate in line with inflation been effective in encouraging an increase in recycling and reuse?
	A2 What is the impact of the gap between the lower and standard rate in relation to behaviour?
	A3 How aligned are the different rates and waste categories in LDT legislation with the overall environmental impacts of such waste streams?
	A4 Are there certain waste streams for which the rates do not appear to be having a deterrent effect?
	A5 Has there been any correlation between an increase in LDT rates and an increase in the uptake of alternative more sustainable technologies (e.g. anaerobic digestion and composting)?
	A6 Consider the role of LDT in the drivers of the flow of waste between England (and other UK countries) and Wales and any issues regarding incentivising behaviour and waste tourism.
	A7 Explore the interaction between gate fees and LDT rates.
	A8 Is there any evidence that having the unauthorised disposals rate has had a deterrent effect?
Behaviour	B1 Is there any evidence that the differences in LDT legislation compared within the UK have had an impact, and if so, has this impact been positive or negative on: rates of recycling; levels of tax risk; viability of landfill/waste businesses?
	B2 What has changed in Wales as a result of the Landfill Disposals Tax Act?
	B3 How has the legislation influenced industry behaviour and innovation?
	B4 Has the design of LDT changed behaviours with regard to mis-description of waste for tax purposes?
	B5 Are there any ambiguities or gaps in the current legislation meaning less tax than expected is being collected?
	B6 What impact has LDT had on progress towards meeting existing environmental targets e.g. 2025 and 2050 ‘Beyond Recycling Strategy’ including what has been effective and not as effective?

Question type	Research question
Broader questions	C1 Are there lessons learned from other UK countries which could inform ways to further behaviour change in relation to landfill taxes?
	C2 How aligned is LDT with wider environmental policy?
	C3 What impact has the design of LDT and tax rates had on industry decisions over the viability of landfill sites in Wales?
	C4 What impact has the LDT had on waste sector behaviour and on wider environmental outcomes based on the independent review of the Landfill Disposals Tax Communities Scheme (LDTCS)?

Project scope

1.16 The scope of the review covers the period from September 2017 to March 2023. September 2017 was when the Landfill Disposals Tax Act was granted Royal Assent.

1.17 The research does not consider the performance of the WRA in collecting and managing the tax. The WRA publishes its annual report and accounts on its website, along with regular statistical bulletins. The WRA's role in administering and collecting the tax is also scrutinised by relevant committees of Senedd Cymru.

Report structure

1.18 This report is structured as follows:

- Section 2 presents an overview of the methodology.
- Sections 3,4 and 5 outline the key findings of the review. At the start of each subsection, the research questions it responds to are defined.
- Section 6 provides the conclusion to the study.

2. Methodology

2.1 The methodology for this review was developed with the Welsh Government to ensure alignment with the project scope, aims and research questions (discussed in section 1). The review was split into three phases:

- Phase one: desktop review and analysis.
- Phase two: primary research with stakeholders (survey and interviews).
- Phase three: data synthesis (combining the findings from phase one and two).

2.2 An evaluation framework was developed ahead of the commencement of phase one. This mapped suitable indicators and data sources against each of the research questions. The method for developing the framework is described below, followed by the method for phases one, two and three.

Evaluation framework

2.3 The purpose of the evaluation framework was to enable a systematic approach to answering the research questions. The framework identified the following elements for each research and sub-research question (see Table 2):

- judgement criteria – the standards or targets that can be used to understand success (or otherwise);
- indicators – the type of data required to assess whether the judgement criteria have been met;
- data collection method – the approach to collecting data for the indicators that were identified (primary or secondary); and
- data source – the source of these data.

2.4 The information within the evaluation framework was used to guide the desktop research, set out in the succeeding section.

Phase 1 – desktop review and analysis

2.5 A desktop review was carried out to identify data sources that could initially respond to the research questions and inform the primary research approach. The sources fall into several categories which have been classified below with examples:

- **Legislation** (e.g. LDT Wales Act 2017 legislation and explanatory notes).
- **Policy and strategy** (e.g. Net Zero Wales, Beyond Recycling Strategy).
- **Statistics and forecasts** (e.g. Office for Budgetary Responsibility (OBR) Welsh tax forecasts, WRA LDT revenue statistics).
- **Waste data** (e.g. Natural Resources Wales (NRW) waste returns data from permitted sites, national NRW datasets for collected and treated waste, WasteDataFlow for information on illegal sites and treatment of local authorities' (LA) waste, NRW landfill site operator quarterly returns from 2015).
- **Surveys** (e.g. NRW Commercial and Industry (C&I) waste surveys, NRW Construction and Demolition (C&D) Survey).
- **Reports** (e.g. Waste and Resources Action Programme (WRAP) Gate Fees reports, NRW State of Natural Resources Reports).

2.6 Where possible, data were identified with, and obtained directly from, Welsh Government, NRW, WRA, the Environment Agency (EA), Scottish Environmental Protection Agency (SEPA), and the OBR. This allowed access the most up to date and relevant information.

2.7 The evidence was recorded in Excel and mapped against each research question. Each entry was fully referenced, and the database made full use of tags and filtering to ensure easy extraction of data.

Phase 2 – primary research with stakeholders

2.8 The primary research involved a combination of interviews and surveys. A sampling strategy was developed to identify priority stakeholders to target and how to sample and engage each group (see Appendix C).

Interviews

2.9 Interviews were conducted with six stakeholder groups. These were: trade associations; environmental organisations; regulators / government bodies; commercial collectors / other infrastructure operators; landfill site operators; and waste producers.

2.10 The purpose of the interviews was to gather in-depth insights from a broad range of stakeholder groups with knowledge of the LDT, rather than to gather representative feedback from each stakeholder group. Given this, a purposive approach to sampling was taken to align with the interview aim. Stakeholders were invited to interview via email. Initial invitations were followed with further emails in the case of non-response (whilst providing the opportunity to opt-out of any further communications). Interviews were conducted virtually.

2.11 Email invitations were sent through Welsh Government, Eunomia, and trade associations and representative bodies where appropriate. The latter supporting parties in the recruitment process included the Chartered Institute of Wastes Management (CIWM), United Resource Operators Consortium (UROC), Welsh Environmental Services Association (WESA) and the Welsh Local Government Association (WLGA).

2.12 The original aim was to interview 40 stakeholders across the groups outlined in paragraph 2.9. While there were recruitment challenges (discussed in research challenges and limitations), 29 stakeholders were interviewed by extending timescales. This is shown in Table 3. In drawing on the interview data, it is important to be mindful of the interview numbers and distribution of responses. The low number of responses mean that caution should be applied when drawing conclusions from the interview data which should not be considered fully representative.

2.13 Topic guides of the interview questions for each stakeholder group are available in Appendix B. Findings from the interviews were organised into an analysis matrix, anonymised, analysed thematically according to research and sub-research questions, and incorporated into this review.

Table 3: Target and achieved number of interviews by stakeholder groups

Stakeholder group	Target number of interviews	Number of interviews
Trade associations	2	4
Environmental organisations	2	1
Regulators / government bodies	4	5
Commercial collectors / other infrastructure operators	14	7
Landfill site operators	8	8
Waste producers	10	4
Total:	**40**	**29**

Surveys

2.14 A quantitative survey was developed to complement the qualitative data collected via interviews. The survey was originally intended to gather representative stakeholder views. Following low participation with the interviews, similar issues were anticipated for the survey response rate. Therefore, the survey length was kept as short as possible (five minutes) and focused on the high priority research questions only, to maximise response rates. To further aid survey engagement, questions were predominately closed, though some open text answer boxes were provided to allow respondents to add further detail as desired.

2.15 Surveys were circulated to the four target stakeholder groups (alternative waste treatment providers; commercial collectors; landfill site operators; and skip hire providers) using 'Smart Survey'. The survey link was published on LinkedIn and within trade association (WESA and CIWM) newsletters. To increase stakeholder engagement with the survey, recruitment was also channelled through direct emails to existing contacts via Eunomia and NRW, trade associations (CIWM and UROC), and Welsh Government. Sampling strategies can be found in Appendix C. The survey was live for three weeks in March 2023.

Table 4: Achieved sample size of completed surveyed stakeholder groups

Surveyed stakeholder group	Sample achieved
Landfill site operators	5
Alternative waste treatment providers	5
Skip providers	10
Waste transfer	22
Commercial collectors	8
Total:	**50**

There was a total of 44 respondents to the survey. Due to some respondents representing multiple stakeholder groups, the total sample achieved across the groups was 50.

2.16 The quantitative survey data were reviewed and analysed in Microsoft Excel. Survey responses were presented as is (due to the small sample sizes) as well as summarised using descriptive statistics. The qualitative survey data were compiled and analysed thematically according to research and sub-research questions. Findings from the surveys were anonymised and incorporated into this review.

2.17 While efforts were made to maximise survey participation (for example, several email and social media dissemination reminders, and the survey timescales were extended by two weeks), the total number of survey responses received was 70, and of those, 44 were completed responses (i.e. answered every question). Caution should thus be applied when drawing conclusions from the survey data, as they are not fully representative of the populations surveyed. In acknowledgement of the difficulty in drawing conclusions from small sample sizes, findings from questions with a low response rate (less than 10 respondents) were not reported.

Phase 3 – data synthesis

2.18 As part of this report, the data collected through the desktop review were triangulated with the primary research data. The synthesis was based around the research questions presented in Table 2.

Research challenges and limitations

2.19 This section covers the challenges and limitations associated with the research.

2.20 Phase one was heavily reliant on data from external sources. Due to data sharing issues (including that some organisations were legally prohibited from sharing some

data) and lack of data, some data were not available at all (e.g. instances of misdescription, instances of waste crime, value and quantity of unauthorised disposals). In some instances, this limited ability to undertake comparative analysis (e.g. between UK countries or over a set time series). Research questions to which this limitation is concerned have been indicated throughout the report.

2.21 Due to the time frame for which the data are available, it is not possible to draw any conclusions as to the impact of LDT on Wales' C&D and C&I recycling performance.[11] Additionally, a comparison of Welsh C&D and C&I recycling performance with other UK countries is complex due to data limitations, uncertainties, and gaps.[12]

2.22 There was low engagement from stakeholders in the interviews and surveys. As such, the interview and survey data presented within the report is not fully representative of stakeholder groups and caution should be taken when drawing conclusions from the presented data. In particular, it was difficult to identify and engage stakeholders with appropriate knowledge of LDT from the stakeholder groups of commercial collectors / other infrastructure providers, environmental organisations, and waste producers (notably C&D and C&I producers). This low engagement may have been due to limited availability of stakeholders and limited knowledge of, and engagement with, LDT. Therefore, the views of these stakeholder groups within this review were underrepresented. To tackle this issue, the interview timeframes were extended by an additional five weeks. For the surveys, NRW, and WESA served a key role in disseminating the survey directly to relevant stakeholders.

2.23 Landfill site operators, commercial collectors / other infrastructure operators and waste producers were identified as separate stakeholder groups in the sampling strategy. However, the interview process revealed cross-overs between some stakeholders within the groups (e.g. some interviewees (e.g. LAs) were both a waste producer and a landfill site operator). Although interviewees were categorised under certain stakeholder groups (and the respective topic guide was utilised and

[11] Data are only available for set years, not annually as needed for analysis.
[12] Defra (2022). UK statistics on waste.

amended to ensure other relevant questions were included), this suggests that the viewpoints of these stakeholders reflect their particular experience of LDT rather than that of a predefined stakeholder group.

2.24 There was some concern that stakeholders might use the research for lobbying purposes, or not express their views due to perceived conflicts of interest. Opinions from a wide range of stakeholder groups (Appendix A) were sought in order to mitigate this, as well as triangulating data to ensure robustness.

2.25 LDT sits alongside a wide variety of other policy instruments that aim to direct Wales towards a more circular economy. One of the aims of this review was to isolate the impact of LDT. Within phase one of the review, the desktop review observed trends (e.g. recycling rates) that were influenced by variables beyond LDT such as the evolution of waste policy, strategy and the funding of public services. The intention was for the triangulation of desktop review findings, interview findings, and survey findings to isolate the impact of LDT. However, overall, attributing the individual impact of LDT was challenging.

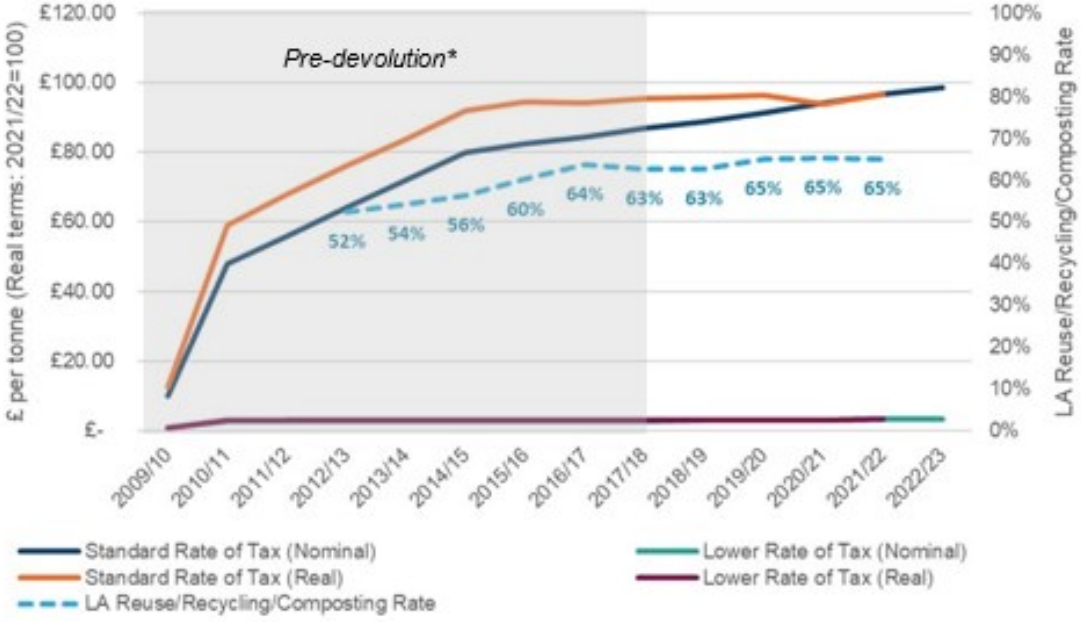
3. Key findings – impact of tax rates

Impact on recycling and reuse

A1. Has the approach taken to date to raise the standard and lower rate in line with inflation been effective in encouraging an increase in recycling and reuse?

3.1 Since 2014, the UK government's approach to LfT rates has been to maintain the standard and lower tax rates in line with the OBR forecast of RPI, rather than actual inflation. To date, LDT rates have matched UK LfT rates to provide consistency, certainty, and stability for businesses and mitigate concerns about waste tourism (see 3.38) across the England-Wales border. As shown in Figure 1 (which compares how municipal waste reuse, recycling, and composting rates have changed against LDT rates), despite there being no real terms increase to LDT, reuse, recycling and composting rates increased by two per cent.[13]

Figure 1: Nominal and real landfill disposals tax rates compared to municipal reuse/recycling/composting rates (2009 – 2023)[14]



Source: Welsh Government (2023). Landfill Disposals Tax Statistics

**Grey area refers to the period pre-devolution*

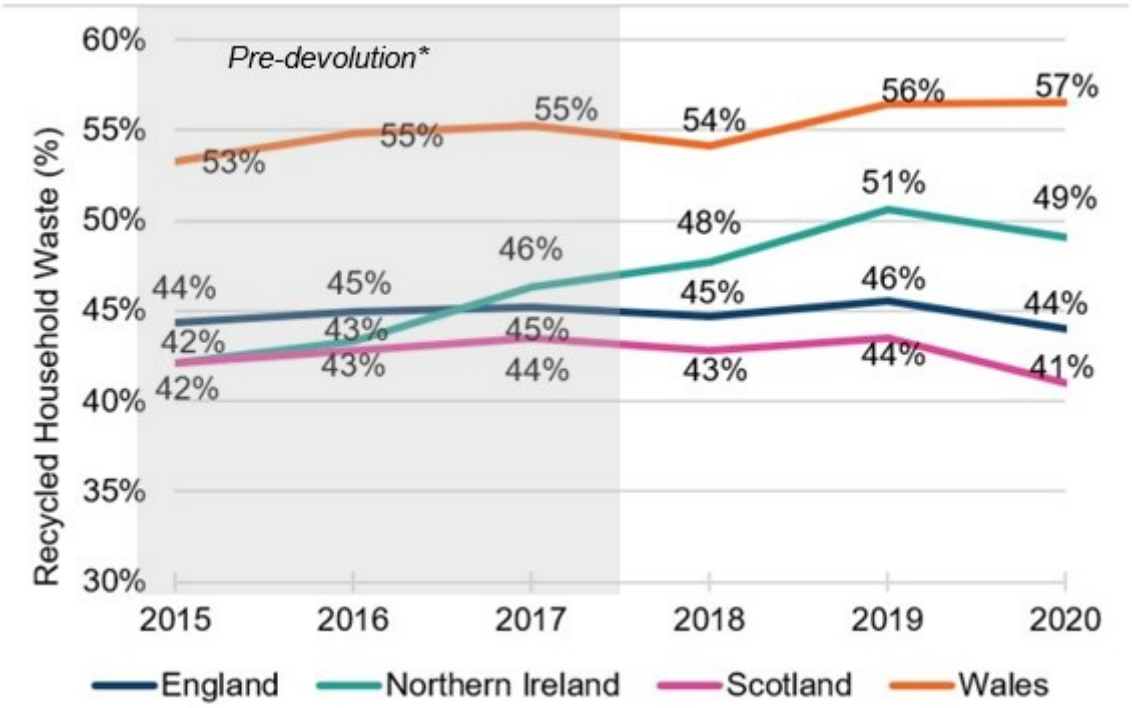
3.2 While LDT and LfT have had the same rates, since 2015, waste from households recycling rate has been consistently higher in Wales compared to the rest of the UK

[13] This is with reference to local authority collected municipal waste only.

[14] Within Figure 2, the standard rate of tax (real) dips in real terms 2021/21. As tax rates are announced ahead of time, this dip is a result of the rates being based on the OBR forecast of RPI, rather than actual inflation.

(Figure 2).[15] In 2020, Wales' recycling rate stood at 57 per cent compared to a UK average of 44 per cent. Notably, between 2019 and 2020, Wales was the only UK country to report an increase in recycling rates (one per cent increase). In contrast, the recycling rates of England, Northern Ireland and Scotland fell by two or three per cent.

Figure 2: Annual waste from households recycling rates of UK countries



Source: Defra (2022). UK statistics on waste

**Grey area refers to the period pre-devolution of LDT*

3.3 Figure 1 and 2 suggest that the observed increase in reuse, recycling and composting is due to other factors, besides LDT. For example, other policy measures in operation at the same time as LDT. Such policy measures (e.g. Towards Zero Waste,[16] Beyond Recycling,[17] the Wellbeing of Future Generations Act[18]) have placed, or currently place, emphasis on recycling in Wales. The increase may also be due to the uptake of alternative forms of waste treatment such

[15] 'Waste from households' is the agreed and harmonised UK measure used to report household recycling. Waste from households includes regular household collection, civic amenity sites, bulky waste and other household waste.
[16] Welsh Government (2010). Towards zero waste: our waste strategy
[17] Welsh Government (2021). Beyond Recycling 2021
[18] Welsh Government (2015). Well-being of Future Generations (Wales) Act 2015

as waste prevention, recycling and other forms of residual waste treatment (e.g. energy from waste (EfW)). The uptake of alternative technologies is discussed further within section 3.

3.4 In terms of wider recycling performance, Table 5 5 sets out recycling rates from the construction and demolition (C&D) and commercial and industrial (C&I) sectors in Wales. Between 2012 and 2019, the C&D recycling rate increased by six percentage points with 3.07Mt of C&D waste sent for preparation for reuse, recycling, composting, and backfilling activities. Accordingly, the C&D waste recycling target of 90 per cent (as set out in Towards Zero Waste[19]) was thought to have been achieved in 2019. The C&I recycling rate also increased between 2012 and 2018 (nine percentage point increase). There was a notable increase in the proportion of industrial sector waste for preparation for reuse, recycling, composting, and backfilling (50 per cent in 2012 to 69 per cent in 2019).

3.5 Due to the time frame for which the data are available, it is not possible to draw any conclusions as to the impact of LDT on Wales' C&D and C&I recycling performance.[20] It is not possible to robustly compare Welsh C&D and C&I recycling performance with other UK countries due to data limitations, uncertainties, and gaps.[21]

Table 5: Welsh C&D and C&I recycling rates

Sector	Recycling, reuse and composting rate	
	2012	2018/2019
C&I	58%	67%
C&D (excluding hazardous waste and soils)	87%	93%

Source: Natural Resources Wales (2022).2019 Wales Construction & Demolition Waste Arisings Survey. Natural Resources Wales (2022). Industrial and Commercial Waste Survey 2018.

3.6 Within the qualitative interviews, stakeholders were asked for their views on the impact of increasing LDT rates in line with forecast inflation on recycling and reuse.

[19] Welsh Government (2010). Towards zero waste: our waste strategy
[20] Data are only available for set years, not annually as needed for analysis. Furthermore, the data from the surveys (from 2012 and 2019) is mostly out of the scope of the review which focuses on 2018-2022 (the period following LDT introduction).
[21] Defra (2022). UK statistics on waste.

In line with conclusions drawn from the data above, there was general consensus across 12 interviewees that whilst LDT rates had a slight impact on recycling and reuse, it was difficult to isolate this impact from other policies, spending programmes, and regulatory changes. This view was held across different stakeholder groups (regulators / government bodies; and commercial collectors / other infrastructure operators). Nevertheless, two stakeholders (a trade association and a commercial collector / other infrastructure operator) stressed that the increase in rates was vital to disincentivising sending waste to landfill.

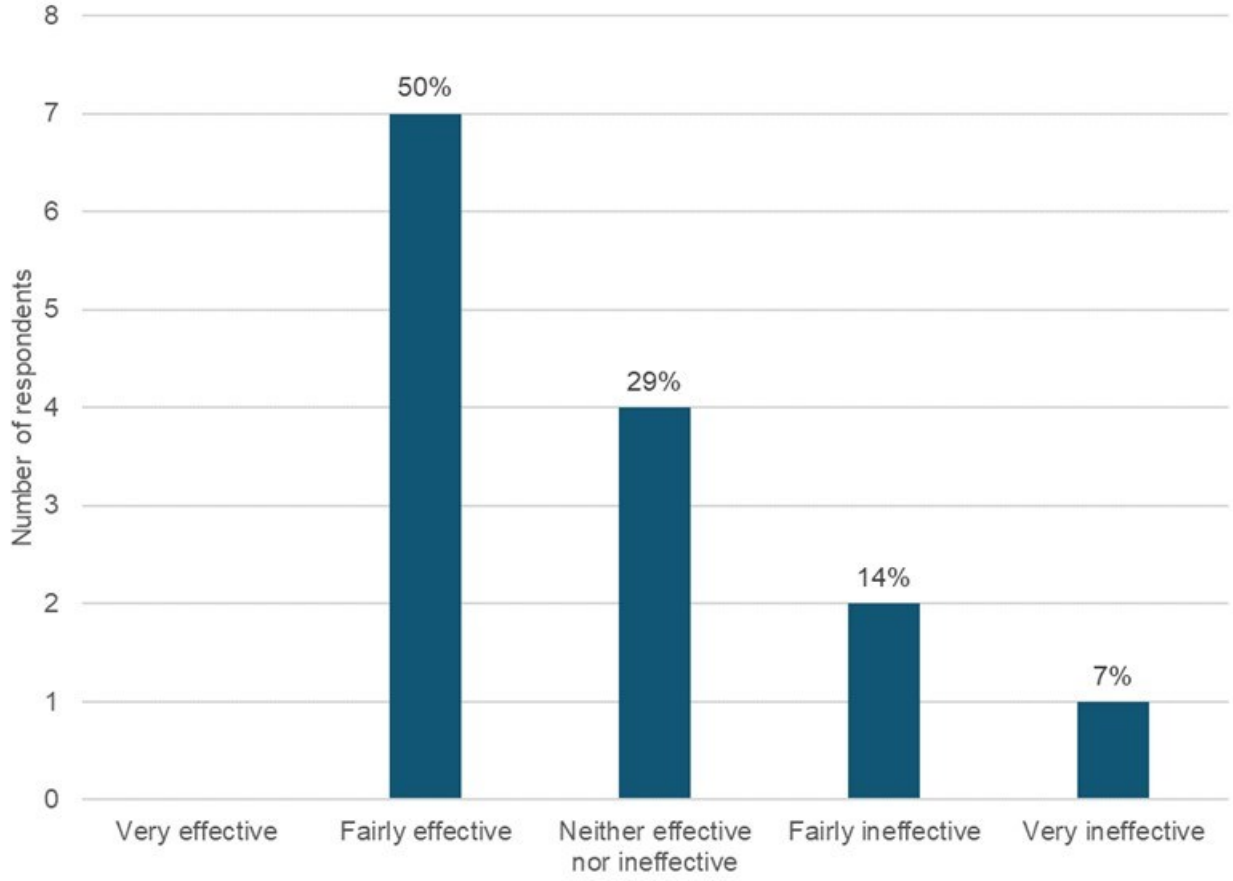
3.7 Other driving forces considered by interviewees to be more impactful than LDT rates in terms of recycling and reuse were:

- the clear political signal from Welsh Government that landfill was not the preferred long-term policy option (trade association); and
- statutory recycling targets set for local authorities by Welsh Government (and financial penalties for not achieving them) (commercial collectors / other infrastructure operators).

3.8 The findings from the quantitative survey were aligned with those from the qualitative interviews. Half of the survey respondents (50 per cent or seven in total) felt that LDT had been 'fairly effective' at increasing recycling rates in Wales.[22] This is shown in Figure 3.

[22] Survey question: Overall, how effective or ineffective have the Welsh LDT rates been at increasing recycling rates in Wales? Please explain your answer using the comment box.

Figure 3: Overall, how effective or ineffective have the Welsh LDT rates been at increasing recycling rates in Wales?



Respondents: landfill site operators, alternative waste treatment providers, commercial waste collectors, skip hire providers, waste transfer providers (n= 14)

Uptake of alternative technologies

A5. Has there been any correlation between an increase in LDT rates and an increase in the uptake of alternative more sustainable technologies (e.g. anaerobic digestion and composting)?

3.9 One of the intended effects of LDT was to continue encouraging the diversion of waste away from landfill sites and towards more sustainable forms of treatment (as similarly intended by LfT Regulations 1996). The following section examines the extent that this effect was realised on C&D, C&I and municipal wastes. It should be noted that there is little comprehensive and accurate data available for C&D and C&I wastes. Therefore, this section predominately focuses on analysing municipal waste and their alternative destinations for treatment.

C&D waste

3.10 To understand the diversion of C&D waste from landfill towards more sustainable forms of treatment, data from NRW's C&D waste survey and NRW waste permit returns were analysed.[23,24,25] Between 2013 and 2021, C&D waste (under European waste catalogue (EWC) chapter 17) represented an increased portion of landfilled wastes' composition, rising from 22 per cent in 2013, to 30 per cent in 2021. Despite this, the tonnage and proportion of total C&D waste landfilled declined between 2012 and 2019 (from 19 per cent to six per cent).

3.11 The decline in the amount of C&D waste landfilled indicates the increased use of alternative technologies. The majority of C&D waste was prepared for reuse or recycling in both 2012 and 2019 with, as discussed in paragraph 3.4 and Table 5, recycling rates increasing over the same period. In 2019, 0.6 per cent of C&D waste was incinerated. However, it is not possible to compare the proportion of C&D waste incinerated over time.[26]

C&I waste

3.12 In terms of the diversion of C&I waste from landfill, the proportion of total C&I waste sent to landfill dropped from 26 per cent in 2012, to 11 per cent in 2018.[27]

3.13 In terms of the uptake of alternative technologies, the majority of C&I waste was prepared for recycling in both 2012 and 2019 with, as discussed in paragraph 3.4 and Table 5, recycling rates increasing over the same period. C&I waste being incinerated with energy recovery also increased (1.7 per cent to 7.8 per cent).

[23] NRW (2019) Construction and demolition waste survey for 2019
[24] NRW (2022). Waste Permit Returns Data Interrogator
[25] Permit returns data from NRW does explicitly state the originating source of the waste sent to landfill. However, some chapters within the European waste catalogue are specific to waste sources.
[26] Within the 2012 C&D Survey, incineration is grouped under 'other' (which encompasses: composting; land recovery; incineration; transfer station; and don't know). In 2012, one per cent of 'other' was treated by incineration.
[27] NRW (2018). Industrial and Commercial Waste Survey 2018

Municipal waste

3.14 Permit returns data from NRW showed that municipal waste (EWC chapter 20) represented a decreased portion of landfilled wastes' composition between 2013 and 2021 (dropping from 25 per cent to 16 per cent).

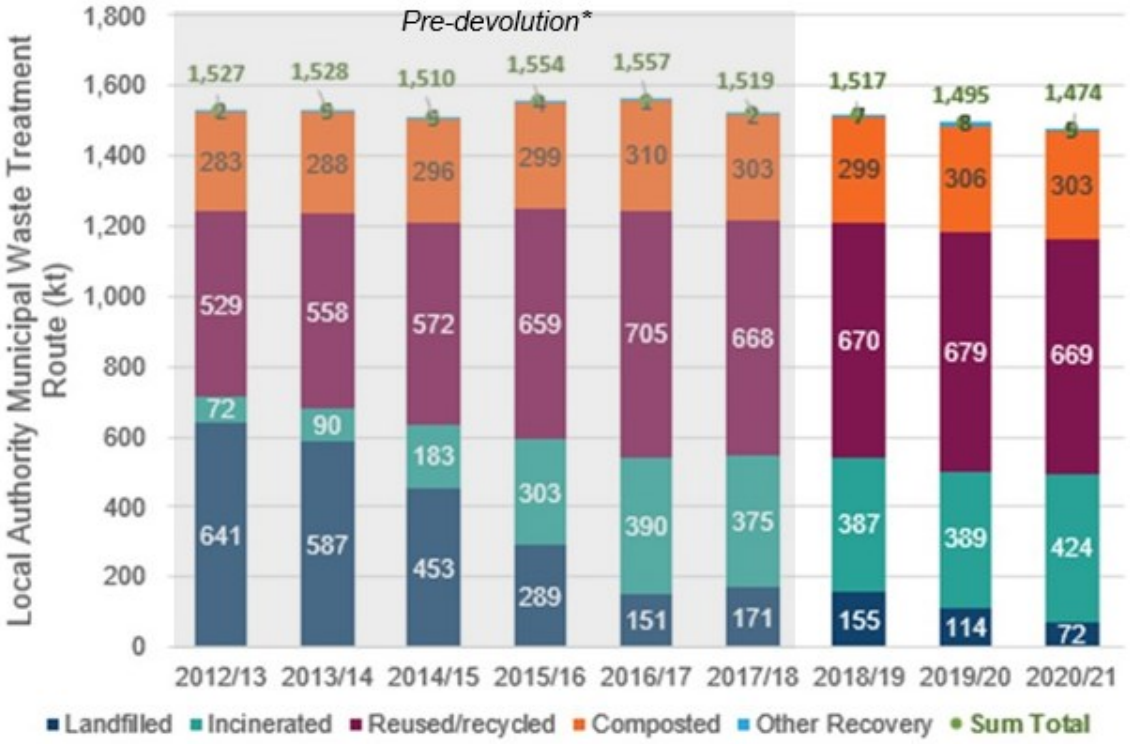
3.15 To understand any historical changes in waste going to landfill versus alternative technologies, municipal waste data submitted to NRW by local authorities ("WasteDataFlow") were analysed and categorised based on treated options (Figure 4). Given the nature of municipal waste commonly collected by LA's, this relates more to standard rate than lower rate.

3.16 As shown in Figure 4, pre-devolution from LfT, LA collected municipal waste sent to landfill had a long-term trend of substantial decreases, likely due to the effects of LfT as per the findings of the 2014 LfT review.[28] Between 2018/19 and 2020/21, landfilled LA collected municipal waste decreased from 155kt to 72kt.

3.17 With regard to the uptake of alternative technologies, the amount of LA collected municipal waste reused/recycled and composted (including anaerobic digestion) stayed reasonably consistent between 2015/16 and 2020/2021. Over the same period, the amount of LA collected municipal waste treated via incineration increased (from 387kt to 424kt). A key reason for this increase may have been due to the additional availability of EfW infrastructure (e.g. Viridor Cardiff Energy Recovery Facility and Parc Adfer Energy Recovery Facility), and/or the change in price of treating waste through energy from waste (EfW) compared to landfill. As shown in Figure 5, between 2014 to 2022, the median cost of EfW treatment was lower than the cost of treating waste at landfill.

[28]HM Revenue and Customs (2014). Qualitative Research into Drivers of Diversion from Landfill and Innovation in the Waste Management Industry

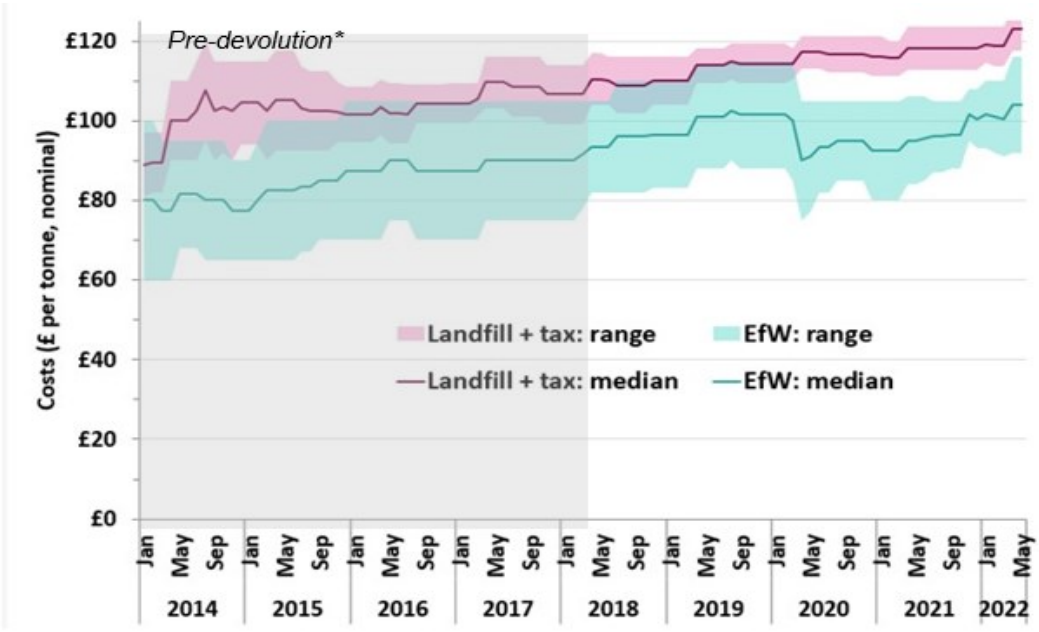
Figure 4: Local authority municipal waste treatment routes (kt), 2012/13 – 2020/21



Source: Waste data submitted to NRW by LAs ("WasteDataFlow")

**Grey area refers to the period pre-devolution of LDT*

Figure 5: Cost of EfW treatment compared with cost of treatment via landfill



Source: LetsRecycle.[EfW, Landfill, and Gate Fee Prices]

**Gray area refers to the period pre-devolution of LDT*

3.18 Reflecting the quantitative data trends presented in Figure 4 (showing uptake of alternative technologies pre-devolution from LfT), interviewed stakeholders had mixed views on whether there was any correlation between an increase in LDT rates and an increase in the uptake of alternative technologies.

3.19 14 interviewees (across all stakeholder groups) felt that the industry had seen large investments into alternative technologies (including anaerobic digestion, composting and EfW) in recent years, and that LDT rates increasing in line with forecast inflation was one of several factors contributing to this. Other factors identified included statutory LA recycling targets and requirements under the Waste Framework Directive and the zero waste to landfill target set out in Beyond Recycling.[29] However, it was sometimes unclear whether interviewees were talking specifically about the past five years (when LDT has been in place) or a broader period that included LfT Regulations.

3.20 Three interviewees felt that whilst there was correlation, there was not causation. This view was held most strongly by regulators / government bodies who believed that it was too early to tell what impact LDT had on alternative technologies. This is because LDT was only introduced in 2018 and that the rates had not increased in real terms. Other policy mechanisms and targets (including those discussed in paragraph 3.19) were considered to be more important in delivering alternative technologies than the rising LDT rates.

3.21 This is not to say that LDT rates generally have, or have not, impacted the uptake of alternative options (which will be further covered in response to research questions B3 and C3 in section 4). Whilst regulator / government body interviewees were of the view that LDT rates were designed to drive the use of alternative technologies, such an aim was not set out in the five principles applied to the tax rates (see paragraph 1.9).The policy intention was for different types of waste to be classified under the rates according to the estimated environmental harm caused by them (as discussed in paragraphs 3.22 to 3.24). As such, the tax contributes to providing market indication of where *not* to take waste, which is landfill.

[29] Welsh Government (2021). Beyond Recycling 2021

Alignment with environment impacts of waste streams

A3. How aligned are the different rates and waste categories in LDT legislation with the overall environmental impacts of such waste streams?

3.22 The desktop review identified a limited set of literature that attempted to define the environmental impacts of landfill in monetary terms. The data that relates to the UK context rely on hedonic pricing techniques and are more than a decade old.[30] More recent data are not directly relevant to the Welsh context, and so a dedicated study may be needed in the future to answer this research question comprehensively.

3.23 In the qualitative interviews, two interviewees (a trade association and a commercial collector / other infrastructure operator) believed that the rates accurately reflected the environmental consequences of the waste types assigned to them. Conversely, three interviewees (trade associations and a commercial collector / other infrastructure operator) believed the rates were insufficiently aligned to the environmental impacts. Two of these interviewees felt that there may be a need for multiple or middle rates to represent different environmental burdens of individual materials. The other interviewee suggested that lifecycle assessments could be used to improve the alignment of tax rates with different waste streams.

3.24 In the HM Treasury's Summary of Responses to the Call for Evidence on aspects of LfT,[31] some stakeholders felt that that the criteria did not take account of the environmental impact of landfilling material rather than recycling or reusing it. For example, the loss of 'embedded carbon' and the carbon and wider environmental impacts associated with producing virgin materials rather than recycling existing ones. In particular, it was felt that the lower rate acted as a barrier to materials moving up the waste hierarchy. This is a view that was captured in the qualitative interviews and is discussed more in the waste crime section within section 3.

[30] Hedonic pricing is a pricing model that takes into account both internal and external factors to determine the value of a good or service. In these studies, the economic impact of landfill sites was determined by the effect they have on local property prices.
[31] HM Treasury (2023). Summary of Responses to the Call for Evidence on aspects of Landfill Tax

Impact on specific waste streams

A4. Are there certain waste streams for which the rates do not appear to be having a deterrent effect?

- **A4.1** Why might this be the case?
- **A4.2** And how could improvements be made to aligning the rates and the waste streams?
- **A4.3** Are there specific types of waste which are currently being unnecessarily landfilled (i.e. they could be reused or recycled)?

3.25 Interviewees identified several waste streams for which it was felt the rates were not having a deterrent effect. These are outlined below.

- **Asbestos** – An environmental organisation defined asbestos as hazardous and best managed at landfill. It was felt that the application of the standard rate incentivised its mismanagement by fly-tipping or hiding it amongst other materials sent to landfill at the lower rate. Two interviewees (from environmental organisations and regulators / government bodies) suggested that applying the lower rate would ensure the safe disposal of asbestos at landfill. This view was reiterated in HM Treasury's Summary of Responses to the Call for Evidence on aspects of LfT.[32]
- **Contaminated soils** – One environmental organisation felt that contaminated soils (e.g. with oils) were easily passed off as clean soils (which attract the lower rate).
- **Gypsum** – Uncontaminated gypsum was considered by an environmental organisation to be relatively non-hazardous and easy to recycle. However, because it attracts the lower rate, this can disincentivise the exploration of recovery and recycling options. The same interviewee suggested that applying the standard rate might encourage the use of alternative treatment options.[33]
- **Incinerator bottom ash (IBA)** – One interviewee (regulator / government body) stated that IBA was a material that attracted the lower rate. The interviewee felt

[32] HM Treasury (2023). Summary of Responses to the Call for Evidence on aspects of Landfill Tax
[33] Gypsum is banned from landfill cells that accept biodegradable waste.

that IBA could be moved to the standard rate to incentivise the recovery of valuable metals and/or use in construction. The need to move IBA away from the lower rate (to encourage movement up the waste hierarchy) was reflected in HM Treasury's Summary of Responses to the Call for Evidence on aspects of LfT.[34]

- **Low activity inorganic compounds** (i.e. Group six materials such as Calcium Carbonate, Magnesium Hydroxide, Aluminium Oxide) – A regulator / government body interviewee felt that such inorganic compounds could be recovered and recycled for further use. To promote such use, they need to be distinguished from clean soil and gravel (which currently attract the lower rate).
- **Plastics** – Three interviewees (landfill site operator, trade association, regulator / government body) stated that plastics were still being sent to landfill. One interviewee considered this to be due to the lack of plastics recycling in the UK rather than landfill tax rates.
- **Textiles and woods (such as MDF)** – A regulator / government body interviewee explained that such materials were still being sent to landfill due to lack of access to cost effective recycling markets.[35]
- **Waste from mechanical treatment (i.e. EWC code 191212**) – A regulator / government body interviewee stated that this waste was being sent to landfill in large tonnages. It was unclear whether the interviewee was referring to sorted residual waste (which would be expected in landfill) or trommel fines, both of which could be classified as 191212.

3.26 In the quantitative survey, stakeholders that handle waste were asked whether they felt there were any types of waste within their current operations that were being unnecessarily landfilled. Just over half (54 per cent, or seven respondents) of replied 'yes' whilst just under half (46 per cent, or six respondents) said 'no'.[36] When asked why, the most common answers given were a lack of access to alternative treatment facilities and the cheaper cost of disposal relative to alternative treatment

[34] HM Treasury (2023). Summary of Responses to the Call for Evidence on aspects of Landfill Tax
[35] Waste wood will be banned from landfill from April 2023.
[36] Survey question: In your operations, are there types of waste which are currently being unnecessarily landfilled (i.e. they could be reused/recycled)? Respondents: landfill site operator, alternative waste treatment provider, commercial waste collector, skip hire provider, waste transfer provider (N= 13).

facilities.[37] This aligns with the reasoning given by interviewees when asked the same question.

3.27 In terms of aligning the rates and waste streams, some of the suggestions from interviewees above involve to moving materials from one tax rate to the other. Elsewhere in the interviews, a few stakeholders suggested the introduction of 'multiple' or 'middle' rates (see paragraph 3.23) which could also apply here. Any changes to the rates will likely need to consider a balance between the environmental impacts of the waste stream and the availability of opportunities within the UK to treat waste outside of landfill. Using multiple rates would need to be carefully considered to ensure that appropriate rates are applied to different waste streams. Furthermore, efforts would need to be made to minimise stakeholder confusion with administering and understanding relevant rates, alongside ensuring alignment with other UK countries and their equivalent landfill tax rates.

Waste tourism

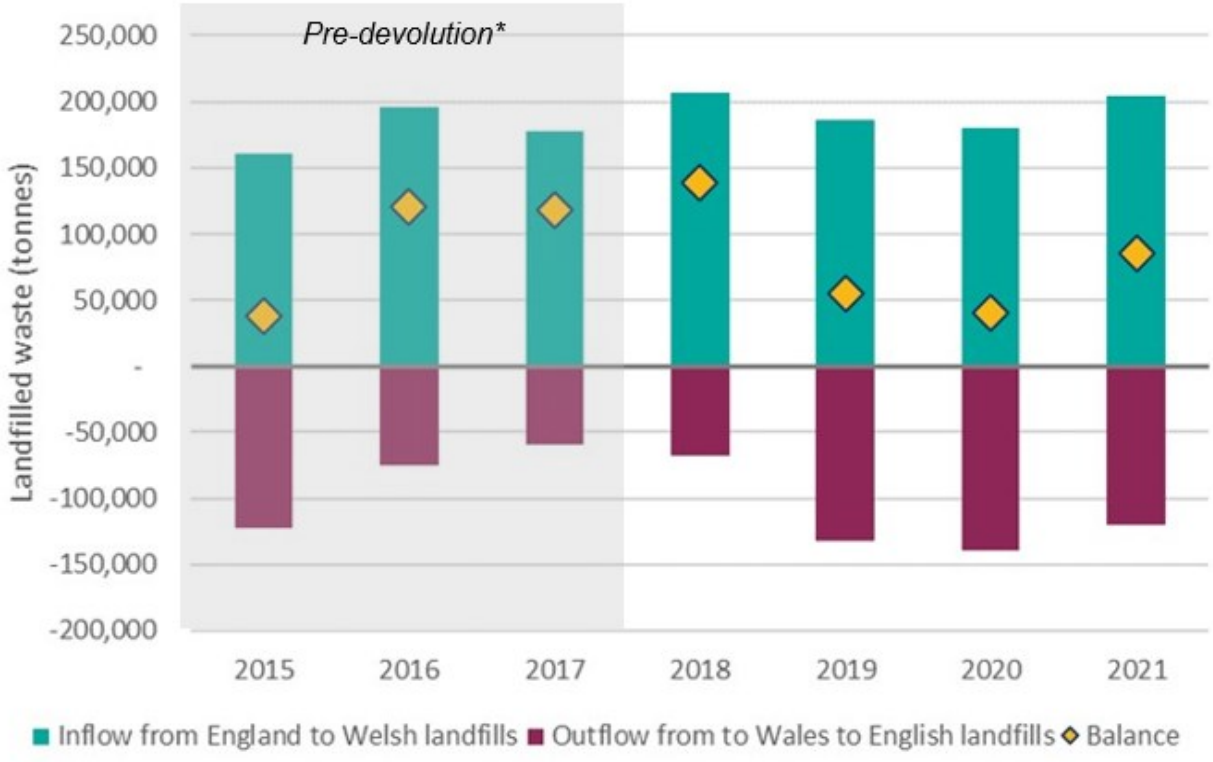
A6. Consider the role of LDT in the drivers of the flow of waste between England (and other UK countries) and Wales and any issues regarding incentivising behaviour and waste tourism.

3.28 Historically, the same tax rates have been set under LDT, the England and Northern Ireland LfT, and Scottish Landfill Tax SLfT. Similarly, these rates apply to the same materials. The purpose for aligning the tax rates and materials following the LfT devolution was to disincentivise waste tourism. Waste tourism refers to flows of waste of across borders for treatment, usually for cost reasons; lower rates in one country could potentially encourage businesses from other countries to dispose of waste via landfill there to avoid paying a standard rate in their location.[38] The current approach is intended to make it less likely for the landfill taxes to encourage waste tourism across the UK countries, including across the border between Wales and England (and vice-versa).

[37] Survey question: In your opinion, why are they being sent to landfill? Please explain your answer using the comments box. Respondents: landfill site operator, alternative waste treatment provider, commercial waste collector, skip hire provider, waste transfer provider (N= 10).
[38] Letsrecycle (2021). UK landfill tax rates stay similar after Scottish budget

3.29 As shown in Figure 6, more waste travelled from England for treatment in Welsh landfills than from Wales for treatment in English landfills between 2015-2021, though the balance did fluctuate. This fluctuation was a result of the varying quantities of waste received by English landfills from Wales, ranging between ~60kt in 2017 to a peak of ~140kt in 2020. Definitive reasoning for the high flows of waste from England to Wales could not be determined as part as this review. No trends indicating LDT as encouraging or discouraging waste tourism were determined from the data.

Figure 6: Flows of waste to landfill between England and Wales



Source: NRW (2022). Waste Permit Returns Data Interrogator Environment Agency (2023). Waste Data Interrogator

3.30 Stakeholders were asked about potential reasons for any cross-border waste movement. The general consensus amongst stakeholders (10 interviewees across all stakeholder groups), was that the main driver of waste flow between countries and regions was cost. The higher and lower rates of landfill tax are the same across UK countries, as are the definitions of what materials are included in these rates, so the factors driving costs are gate fees and transport (haulage and fuel costs). A

landfill site operator and a commercial collector / other infrastructure operator reported that the England and Wales border was very fluid, with waste travelling across the border in both directions for treatment due to proximity and convenience. This fluidity is reflected in Figure 6. One landfill site operator felt that a lack of landfill capacity in Wales (combined with the densest populations being at the border) meant that a lot of waste was crossing the border into England. However, it should be noted (as shown by Figure 6), the inflow of waste to Wales for landfilling was greater than the outflow. In line with Figure 6, interviewees did not perceive LDT to incentivise cross-border flows of waste or waste tourism.

3.31 Other factors, besides LDT, could have influenced the flow of waste between England and Wales for treatment (be it landfill or alternative technologies). For instance, England has larger alternative treatment infrastructure capacity and the proximity of this infrastructure to Wales may have resulted in residual waste (that may have otherwise been landfilled in Wales) being shipped to England for incineration. This could occur if the combination of transport, storage, and gate fees in England are less than the overall costs of landfilling the waste in Wales (this point could also explain waste flows from England to Wales). Moreover, it could be that England has bigger treatment facilities which could result in them charging lower gate fees and incentivising waste tourism. The flow of waste could also have been influenced by waste producers' proximity to landfill sites on the border (be it English or Welsh).

Gate fees

A7. Explore the interaction between gate fees and LDT rates.

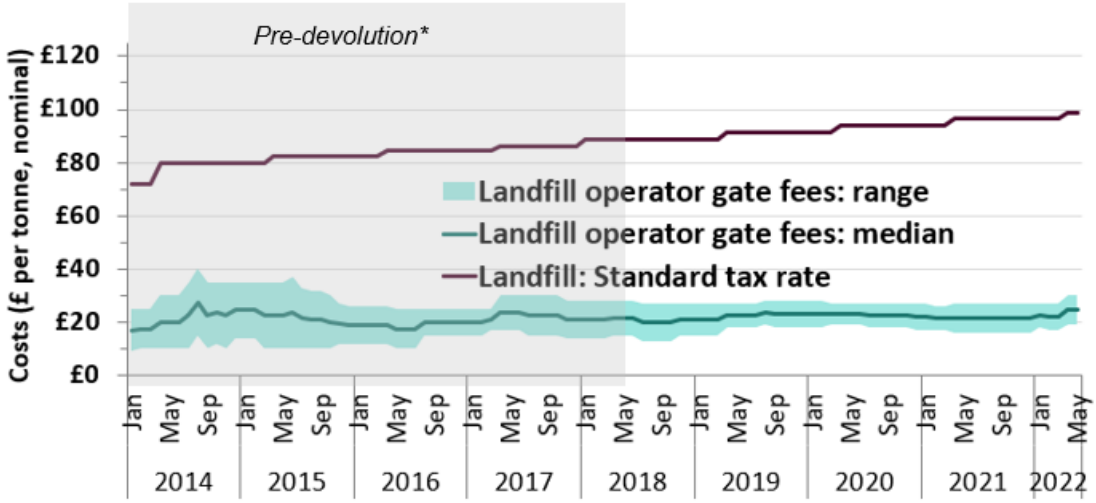
- **A7.1** Have the gate fees decreased as LDT has increased?
- **A7.2** What differences are there in gate fees between Wales and the rest of the UK?
- **A7.3** If there are differences in gate fees, have the differences in gate fees between Wales and the rest of the UK influenced the flow of waste between Wales and the rest of the UK?

3.32 LetsRecycle and WRAP regularly gather and report on UK gate fees for a range of waste recycling, recovery, and disposal options.[39,40] Following a review of 2018 to 2021 gate fees from these two key sources, neither provided a breakdown of landfill gate fees by nation. In its gate fees reports, WRAP specified low response rates for landfill gate fees and broad gate fee response ranges, which make it challenging to provide national comparisons.

3.33 WRAP's Gate Fees 2021/22 Report indicated that Welsh non-hazardous landfill median gate fees (£85/tonne) were substantially higher than England's (£28/tonne), Northern Ireland's (£20/tonne) and Scotland's (£60/tonne). However, it indicated that Wales and Scotland received only two and three responses from LAs respectively, and thus the data should not be treated as representative.[41,42] The report indicated that low survey response rates may be due to LAs not having the time or resource available to respond to the survey, not being able to disaggregate specific gate fees values, or being subject to commercial confidentiality. To answer question A7.1, in lieu of national comparisons, data from the reports were analysed to understand UK-level landfill gate fees. Figure 7 illustrates the historical landfill gate fees across the UK against the landfill tax value, of which the tax remained the same across all nations year-on-year.

[39] Letsrecycle (n.d.). EfW, Landfill and RDF Export Price Indicators
[40] WRAP (2022). Gate Fees 2021/22 Report
[41] WRAP (2022). Gate Fees 2021/22 Report
[42] The Gate Fees 2021/22 report studies gate fees charged to LAs for disposal options including landfill.

Figure 7: Change in UK landfill gate fees compared to UK landfill standard tax rates, 2014 to 2022



Source: LetsRecycle (n.d.).EfW, Landfill, and Gate Fee Prices

**Grey area refers to the period pre-devolution of LDT*

3.34 Between 2018 and 2021, there was minimal variation in UK landfill gate fees. During the same period, the value of landfill taxes across the UK did not change in real terms. This implies that, in real terms, landfill gate fees decreased while landfill taxes remained the same, and so landfill site operators might have attempted to keep the overall cost of landfill constant by decreasing their gate fees. This shows a downward pressure on UK landfill gate fees, making it difficult for landfill site operators to keep pace with inflation in a way that positively impacts profit margins.

3.35 In the qualitative interviews, stakeholders were asked about the interaction between gate fees and LDT rates. All of the 10 landfill site operators interviewed reported increasing their gate fees at the same time as the LDT rate increased. In some cases, gate fees were increased in line with inflation (RPI) and in other cases they had a more modest increase to maintain affordability for local businesses. This corroborates the evidence presented above, that although gate fees are rising, they are not always increasing in line with inflation – and are therefore decreasing in real terms.

3.36 12 interviewees (across the stakeholder groups of landfill site operators, producers, and commercial collectors / other infrastructure operators and trade associations)

viewed gate fees as operator-led and referenced a couple of factors considered more influential than LDT in setting gate fees. These included:

- Supply and demand (for example, gate fees may be lower in areas where there is a lot of competition).
- Base costs of landfill infrastructure, engineering and operation. These base costs were considered to have risen in recent years due to changes in technology and the quality of engineering required.

3.37 As mentioned above, it was not possible to obtain an accurate breakdown of landfill gate fees by nation. Therefore, sub-research questions A7.2 and A7.3 (exploring the differences in gate fees between Wales and the rest of the UK) could not be answered through a review of secondary data. These sub-research questions were subsequently explored as part of the primary research, however, interviewees (from stakeholder groups of trade associations, landfill site operators and environmental organisations) were not aware of any major differences.

Waste crime / compliance

A2. What is the impact of the gap between the lower and standard rate in relation to behaviour?

- **A2.1** For example, has the gap between the standard and lower rates incentivised mis-description of waste?
- **A2.2** And if so, what level of change to the rates could the sector tolerate if the gap was closed?

A8. Is there any evidence that having the unauthorised disposals rate has had a deterrent effect?

- A8.1 Is there any evidence from across the UK that bringing unauthorised disposals under the scope of LDT is deterring waste crime?
- A8.2 Is there any evidence that the higher rate in Wales is having a greater impact than in England and Scotland where the standard rate for unauthorised disposals is applied?

B4. Has the design of LDT changed behaviours with regard to mis-description of waste for tax purposes?

Waste misdescription

3.38 Within the qualitative interviews, stakeholders were asked for their views on the impact of the gap between standard and lower rates of waste management. Data on the incidence of waste crime were not available for review.

3.39 Stakeholders provided varying views as to the impact of the gap between standard and lower rates on waste management. 18 interviews (across all stakeholder groups) felt that the size of the gap provided a perverse incentive for producers to intentionally misclassify waste at the lower rate for economic advantage. This view was reiterated in HM Treasury's Summary of Responses to the Call for Evidence on aspects of LfT,[43] in which respondents believed that increasing the lower rate of tax would reduce instances of misclassification.

"Any burden on the market will generate alternative, less ethical, routes."

Regulator / government body interview, 2022.

3.40 Two interviewees (a commercial collector / other infrastructure operator and a regulator / government body) added that low rates did not influence producers to consider alternative treatment options. Although it was difficult to evidence, they felt this was likely to be happening with materials from construction sites such as soil and soil-like materials where it was believed to be cheaper (and easier) to send to landfill than to find more sustainable waste management. This belief was reflected within HM Treasury's Summary of Responses to the Call for Evidence on aspects of LfT, where respondents believed that alternative treatment options were not being developed for lower rated materials.[44]

3.41 Five interviewees (representing trade associations, commercial collector / other infrastructure operators and regulators / government bodies) felt that the gap between the rates needed to be smaller, or a middle rate of tax (see paragraph 3.23) needed to be introduced to address these issues, give more to the public purse, and minimise the impact on legitimate operators. However, respondents to

[43] HM Treasury (2023). Summary of Responses to the Call for Evidence on aspects of Landfill Tax
[44] HM Treasury (2023). Summary of Responses to the Call for Evidence on aspects of Landfill Tax

HM Treasury's Call for Evidence on aspects of LfT[45] cautioned that a middle tax rate may complicate the tax and increase the risk of waste crime.

3.42 In contrast, five interviewees (landfill site operators and waste producers) did not believe that the differentiation between the standard and lower rate impacted misclassification. Interviewees stated that this belief was consolidated by data from on-site weighbridges and returns. This was reiterated by a regulator / government body interviewee who believed that the gap between the rates was fundamentally doing 'the right thing'. They added that, no matter the size of the gap, there would always be an incentive to misreport waste.

3.43 Interviewees discussed other reasons for misclassification, besides the tax rates. Two interviewees (a trade association and an environmental organisation) noted that misclassification could be both intentional and unintentional. The issue of unintentional misclassification was believed to be exacerbated by complex permits and waste descriptions (e.g. several waste streams under the same code and/or the EWC that was perceived to be confusing). One landfill site operator believed that the reason for misclassification was due to waste classification responsibility lying with the operator. The interviewee added that if the responsibility to comply was placed on the waste producer, there would be fewer instances of misclassification.[46]

3.44 The breadth of stakeholder views suggest that more evidence is needed to understand the extent of misclassification occurring and the effectiveness of current enforcement and compliance measures. This need is reinforced by HMRC data, which estimates the landfill tax gap (due to components including misclassification[47]) as 17.1 per cent of theoretical tax liabilities (2020/21) with an estimated loss of £125 million.[48,]. It is unknown what the tax gap is within Wales as it is not currently assessed due to a range of reasons, one being the difficulty to provide an accurate estimate.

[45] HM Treasury (2023). Summary of Responses to the Call for Evidence on aspects of Landfill Tax
[46] It should be noted that such responsibility already exists. Duty of care requirements mean that producers are obliged to classify their waste on the waste transfer notes.
[47] The tax gap includes undeclared and misclassified waste at authorised waste sites, and detection of waste at unauthorised and known illegal sites.
[48] HM Revenue & Customers (2022). Official Statistics. Tax Gaps: Other Taxes

Unauthorised disposals

3.45 Within interviews, stakeholders were asked whether they were aware of the unauthorised disposals rate having a deterrent effect on illegal waste sites. Those able to offer a perspective questioned its effectiveness (six interviewees from trade associations, producers, regulators / government bodies). Whilst the rate itself (150 per cent) appeared sensible, interviewees stressed issues with its enforcement and lack of awareness of its existence. These two reasons limit the ability of the higher unauthorised disposals rate in Wales to have a greater positive impact.

3.46 Two interviewees (a producer and a trade association) shared anecdotes on fly tipping; whilst cases had been taken to court, judges were reluctant to pass a sentence due to uncertainty of perpetrator identification. As a result, interviewees believed that perpetrators were less fearful of the consequences of illegal behaviour. Furthermore, the trade association interviewee also believed that a large proportion of fly tipping was carried out by organised criminals who may consider the potential fine (150 per cent of the standard rate) very small relative to the perceived potential financial benefits. However, the same interviewee suggested there were issues with the robustness of fly tipping data with anomalies and variable data gathered. This means that conclusions regarding the impact of the unauthorised disposals rate are difficult to draw.

3.47 With regard to the impact of the higher unauthorised disposals rate in Wales compared to England and Scotland, four interviewees (representing trade associations and regulators / government bodies) believed either that there was no observable impact (for the reasons discussed in paragraphs 3.45 to 3.46), or that it was too early to assess this since LDT began. Nevertheless, a Scottish regulator / government body believed that it had the potential to be positive and allow for the generation of greater revenue.

4. Key findings – impact of regulation

B1. Is there any evidence that the differences in LDT legislation compared within the UK have had an impact? If so, has this impact been positive or negative on:

i) rates of recycling

ii) levels of tax risk

iii) viability of landfill/waste businesses

Legislative differences

4.1 The following section sets out the main differences between LDT and LfT/SLfT legislations relating to water discounts, exemptions and reliefs, lower rate waste streams, unauthorised disposals and taxable disposals.[49] The impact of the identified differences on (i) levels of tax risk and (ii) viability of landfill/waste businesses are presented in the subsequent sections. The impacts of LDT on recycling and reuse is discussed within section 3.

4.2 Nine interviewees (across stakeholder groups of landfill site operators, regulator / government bodies, environmental organisations, commercial collectors and other infrastructure operators) had a general lack of awareness of the differences in legislation, with belief that the legislation was generally the same between nations and faced similar policy challenges (e.g. misdescription). One regulator / government body interviewee noted that whilst the legislative/legal structure was the same, there were slight administrative differences which allowed alterations in the legislations according to nation's specific needs.

4.3 Where the impact of differences has been commented on, this is detailed below. Where stakeholders could not comment on impact due to lack of awareness on the differences, the differences in legislation are simply defined below.

[49] The tender specification noted that "a degree of comparison between LDT and LfT might arise - this will not be about comparing every line of the respective Acts, but to select parts of the legislation that have a behavioural element and will provide a helpful assessment of opportunities to improve LDT e.g. effectiveness of reliefs and discounts."

Water discounts

4.4 In terms of water discounts, LDT legislation seeks to clarify the arrangements and processes for applying for and claiming water discount. LDT and LfT both provide a discount which is applied to the water content of material when calculating the taxable weight of waste. Both regimes require the presence of at least one of the same five criteria for the application of a discount, namely that the water is present as:

- it had to be added to enable the material to be transported for disposal;
- it had to be used to extract a mineral;
- it had to be added in the course of an industrial process;
- it arose as a necessary consequence of an industrial process; or
- the material is a residue from the treatment of effluent or sewage at a water treatment works.

4.5 Although the provisions in Wales have broadly the same effect as the English and Scottish provisions, there are differences. In Wales, all of the relevant provisions are on the face of the legislation rather than in the regulations. This aims to provide transparency and stability. Furthermore, the application process for water discounts differs between LDT and LfT. Firstly, LfT specifies that the water present must constitute at least 25 per cent of the weight of the material, while LDT has no such specification as it is perceived as open to abuse. As a result, LDT introduced a necessity test that requires that the water added must have been necessary in order to qualify for a water discount. Without having a threshold criterion for the percentage of water weight, it is unclear how this discount is being used in practice. Secondly, in Wales the landfill site operator (the taxpayer) applies for the water discount whereas, in England, the waste producer or processor applies for the discount in an agreement with HMRC and the landfill site operator. Therefore, in England, a waste producer can hold a single water discount application with multiple landfill site operators (meaning landfill sites may have more than one application). As a result, data on the numbers of discounts applied in Wales versus England are not directly comparable. The impact of the differences in water

discounts is discussed further in section 4 – reliefs discounts and exemptions, and levels of tax risk.

Exemptions and reliefs

4.6 Under LfT, all situations in which a taxable disposal can be relieved of a charge are classified as exemptions (though each provision requires a different taxpayer approach). These exemptions do not require HMRC assessment. Under LDT, exemptions are separated into exemptions and reliefs. Exemptions do not require information to be submitted to the WRA for the entitlement to be established.[50] Furthermore, exempt disposals do not have to submit returns. Unlike exempt disposals, relieved disposals are required to submit returns.

4.7 Two exemptions exist under LDT, namely multiple disposals of material at the same site and pet cemeteries. LfT has an exemption relating to waste from visiting forces. While the following materials may have been treated as exemptions under LfT and reliefs under LDT, the legislations indicate a similar outcome of the tax not being chargeable to such materials where the following criteria are met:

- materials removed from water (dredging);
- materials used for filling quarries;
- materials from site restoration; and
- materials arising from mining and quarrying operations.

4.8 Of these reliefs, the latter two have undergone amendments. Amendments to refilling open-cast mines and quarries extended the scope of the relief to include 'a qualifying mixture of materials that does not consist entirely of fines' and ensured that future taxable disposals of qualifying materials were eligible for the relief.[51] The two amendments to site restoration material:

- allowed site restoration relief to be claimed for material consisting entirely of topsoil.[52]

[50] The WRA is able to raise a query as part of its compliance and enforcement work.
[51] Welsh Government (2019). 2019, No.1143 (W. 198). The Landfill Disposals Tax (Wales) Act 2017 (Reliefs) (Miscellaneous Amendments) Regulations 2019
[52] Welsh Government (2018). 2018, No.1057 (W. 221). The Landfill Disposals Tax (Wales) Act 2017 (Site Restoration Relief) (Amendment) Regulations 2018

- amended the definition of ‘restoration work’ to encompass work carried out to restore a landfill disposals area that has not been capped.[53]

The impact of the differences in exemptions and reliefs is discussed in paragraphs 4.12 to 4.18 of the report.

Waste streams qualified under the lower rate

4.9 LfT cites that waste must be non-hazardous, must have low potential for greenhouse gas emissions, and must have low polluting potential in the landfill environment to qualify under the lower rate. Rather than having criteria for qualified waste streams, LDT specifies the exact waste streams under this rate, including rocks and soils, ceramic or concrete material, minerals, furnace slags, ash, low activity inorganic compounds, calcium sulphate, and calcium hydroxide and brine.

Unauthorised disposals

4.10 Both LDT and LfT brought unauthorised disposals into the scope of the tax. However, within England, unauthorised disposals are charged at the standard rate, plus a potential penalty fine. In Wales, there is a separate rate for unauthorised disposals (150 per cent of the standard rate). The impact of this unauthorised disposal rate is discussed further in paragraph 3.45 of the report.

Taxable disposals

4.11 Both LDT and LfT include a basic test for a taxable disposal. However, the following refinement is also applied to LDT legislation:

- it seeks clarity that the landfill site operator is liable;
- it seeks confirmation that the ‘intention to discard’ can be inferred from the circumstances, making it less subjective; and
- it clarifies that, despite there being a temporary or incidental benefit, the disposal can still fall within the scope of the tax.

[53] Welsh Government (2019). 2019, No.1143 (W.198). The Landfill Disposals Tax (Wales) Act 2017 (Reliefs) (Miscellaneous Amendments) Regulations 2019

Reliefs, discounts, and exemptions

B3.4 What impacts have the reliefs, discounts and exemptions under LDT had on taxpayer behaviour?

B3.5 Are the reliefs, discounts and exemptions in LDT still appropriate and necessary?

4.12 A combination of primary and secondary data were gathered to understand how the reliefs, discounts and exemptions under LDT have impacted taxpayer behaviour. An overview of reliefs, discounts and exemptions under LDT are provided in paragraphs 4.4 to 4.8.

4.13 Within Wales, the number of approved water discount applications fluctuated between 10 and 20 in the years 2018-19 to 2022-23 (Table 6) Data on withdrawn or declined applications is only available for 2022-23.

Table 6: Total number of water discount applications in Wales received by the WRA

Financial year	Wales	
	Approved applications	Withdrawn or declined applications
2018-19	15	Not available
2019-20	20	Not available
2020-21	10	Not available
2021-22	10	Not available
2022-23	15	5

Source: WRA (2022)

Notes: WRA water discount agreements usually run for a 12-month period at which point they are reviewed which can result in a new agreement. Data are rounded to the nearest five applications. Approved applications include new agreements, renewal agreements after a 12-month review and variations to an agreement. Landfill site operators can withdraw an application before it is approved. Data for 2022-23 represent those applications received to the point at which we produced these statistics, and therefore cover the period from 1 April 2022 to 10 October 2022.

4.14 It is not possible to understand the impacts of water discounts under LDT on taxpayer behaviour from the secondary data alone. Therefore, insights were sought through qualitative interviews on the impact, necessity and appropriateness of this discount in addition to other discounts, reliefs and exemptions.

4.15 In terms of water discounts, two landfill site operator interviewees explained that, in Wales, the relationship for water discounts was between the WRA and landfill site operator (as explained in paragraph 4.5), with the latter responsible for testing and analysing the waste stream in any associated conditions. As a result, the interviewees believed that landfill site operators incurred higher costs.

"We would incur more costs and risk to do what is required with the waste so we have stopped taking it. As a result, there is a market out there that we do not feel like we can deal in."

Landfill site operator interview, 2022.

"For the water discounts, we reject about 25,000 tonnes per annum due to a cautious approach [by the operator]"

Landfill site operator interview, 2022.

4.16 Whilst reliefs were considered by one landfill site operator as administratively burdensome, other interviewees (one landfill site operator and one trade association) thought that their existence was necessary due to the financial and environmental benefits associated with them. If reliefs did not exist, the refilling of quarries would be too costly and hinder the subsequent creation of habitats such as wetlands (which are often created through quarry restoration).[54]

4.17 However, HM Treasury's Summary of Responses to the Call for Evidence on aspects of LfT, identified concerns regarding the regulation and enforcement of inert waste being used to restore quarry sites.[55] As such, the UK government will review whether the current exemptions within LfT continue to support broader environmental objectives.

4.18 The general consensus across interviews was that identifying any impact (from reliefs, discounts and exemptions) on behaviours was very challenging. This was partly due to the difficulty in comparing the impacts in Wales compared to other nations. For example, in Wales, data on exemptions were not recorded before the introduction of LDT and current reliefs are classified as exemptions under LfT.

[54] The refilling of quarries is a relief under LDT, and an exemption under LfT.
[55] HM Treasury (2023). Summary of Responses to the Call for Evidence on aspects of Landfill Tax

Legislation ambiguities and gaps

B5. Are there any ambiguities or gaps in the current legislation meaning less tax than expected is being collected?

4.19 Interviewees struggled to identify any ambiguities or gaps in the current legislation. This was particularly true of the waste management sector who mainly had knowledge of the tax rates rather than the legislation as a whole.

4.20 One regulator / government body interviewee believed that it was too early to tell whether there were gaps in the legislation, particularly in the absence of any court decisions (which would make such gaps apparent). It is worth noting that whilst there are current court cases in Scotland and England, LDT legislation was drafted in such a way to try to avoid litigation, taking lessons from cases elsewhere (discussed in paragraph 1.9).

4.21 Another interviewee (trade association) felt that more tax would be collected with the introduction of a middle tax rate (see paragraph 3.23). This could promote the desired behaviours and minimise criminal activity such as misdescription (see section 3 – waste crime). It would also serve to minimise impacts on legitimate operators by creating a more level playing field.

Levels of tax risk

B1.2. Is there any evidence that the differences in LDT legislation compared within the UK have had an impact? If so, has this impact been positive or negative on levels of tax risk?

4.22 To understand differences in tax risk between UK countries, secondary and primary research data relating to tax risk were collected (namely instances of misdescription and water discounts). It should be noted that secondary data on these risks were either not available or only available for Wales.

4.23 Between England and Wales, no differences in legislation relating to waste misdescription were identified. Within Wales, there was an absence of direct data relating to instances of waste misdescription. Data that were available were of a confidential nature and were not available for review. In terms of qualitative

research, interviewees discussed instances of misdescription in relation to the tax rates. This is discussed in paragraphs3.38 to 3.44.

4.24 There was also an absence of data relating to water discounts and tax risk (though the impact of water discounts in general is discussed in paragraphs 4.12 to 4.18). One interviewee (a trade association) believed that water discounts were open to abuse as a result of LDT legislation, and explained that operators in Wales had been wrongly claiming relief for water discounts. This suggests that the adjustments made within Welsh legislation to reduce the potential for abuse (see paragraph 4.5) may not be fully effective. However, it should be noted that this view was anecdotal rather than direct experience and that it was not believed to be an issue unique to Wales. In contrast, a regulator / government body interviewee believed that there was a lot of due diligence surrounding water discounts to reduce risks.

Viability of landfill/waste businesses

B1.3. Is there any evidence that the differences in LDT legislation compared within the UK have had an impact? If so, has this impact been positive or negative on the viability of landfill or waste businesses?

C3. What impact has the design of LDT and tax rates had on industry decisions over the viability of landfill sites in Wales?

4.25 To understand differences in business viability between UK countries, secondary and primary data relating to the number and viability of waste treatment sites and operators by treatment option were collected. Analysis of these sources forms the content of the below discussion. It should be noted that secondary data on these elements were available for Wales, Scotland, and England but only partially available for Northern Ireland.

4.26 Table 7 sets out the number of landfill sites in the UK by nation. The number of Scottish landfill sites fell by 14 per cent (from 51 to 44 sites) between 2017 and 2021. Despite the data gaps, the data indicate that the number of Northern Ireland sites also fell over the same time period. In Wales, the number of landfill sites declined from 23 in 2018 to 20 in 2022. In contrast, the number of English landfill sites increased between 2016 and 2021. The potential reasons for these differences are discussed in paragraph 4.29.

Table 7: Number of landfill sites in the UK by nation, 2017 to 2022

Location	2017	2018	2019	2020	2021	2022
Wales	n/a	23	23	21	20	20
England	515	534	536	534	527	n/a
Scotland	51	50	45	43	44	n/a
Northern Ireland	33	n/a	n/a	n/a	21	21

Sources: SEPA (2022). Waste sites and capacity data tool. Environment Agency (2022). Remaining Landfill Capacity. WRA (2022). Registered landfill site operators in Wales. . WRA (2022). Welsh Landfill Tax Statistics. HMRC (2021). List of registered landfill site operators. NIEA (2018). Authorised landfill sites

Notes: 2017 data are included only to provide context for Northern Ireland sites due to lack of available data for 2018 – 2020. The number of Welsh landfill sites is taken from the calendar year end. N/A denotes unavailable data.

4.27 The number of landfill site operators within Scotland, Wales, Northern Ireland, and England between 2016 and 2021 followed the same trends as the number of landfill sites, as shown in Table 8. There was a decrease in the number of landfill site operators in Scotland by 28 per cent (from 39 to 28 operators) between 2017 and 2021. Despite the data gaps, available data indicate that the number of landfill site operators in Northern Ireland also fell. Meanwhile, the number of landfill site operators in England increased by two per cent (from 315 to 320 operators) over the same period. In Wales, the number of operators remained stable at 17 between 2018 and 2022. It should be noted that the number of landfill site operators in Wales did briefly increase to 18 between July and September 2018 before dropping back down to 17.

Table 8: Number of landfill site operators in the UK

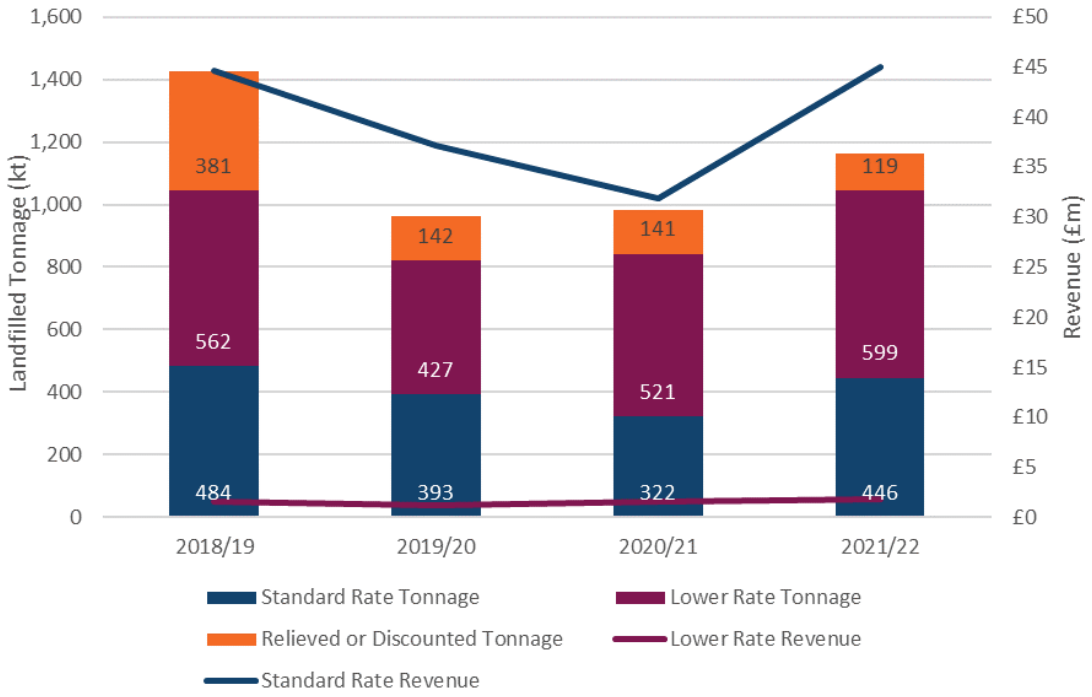
Location	2017	2018	2019	2020	2021	2022
Wales	n/a	17	17	17	17	17
England	315	323	329	329	320	n/a
Scotland	39	37	31	30	28	n/a
Northern Ireland	31	n/a	n/a	n/a	21	n/a

Sources: SEPA (2022). Waste sites and capacity data tool. Environment Agency (2022)., Remaining Landfill Capacity. WRA (2022). Registered landfill site operators in Wales. . WRA (2022). Welsh Landfill Tax Statistics. HMRC (2021). List of registered landfill site operators. NIEA (2018). Authorised landfill sites.

Notes: 2017 data are included only to provide context for Northern Ireland sites due to lack of available data for 2018 – 2020.The number of Welsh operators is taken from the calendar year end. N/A denotes unavailable data.

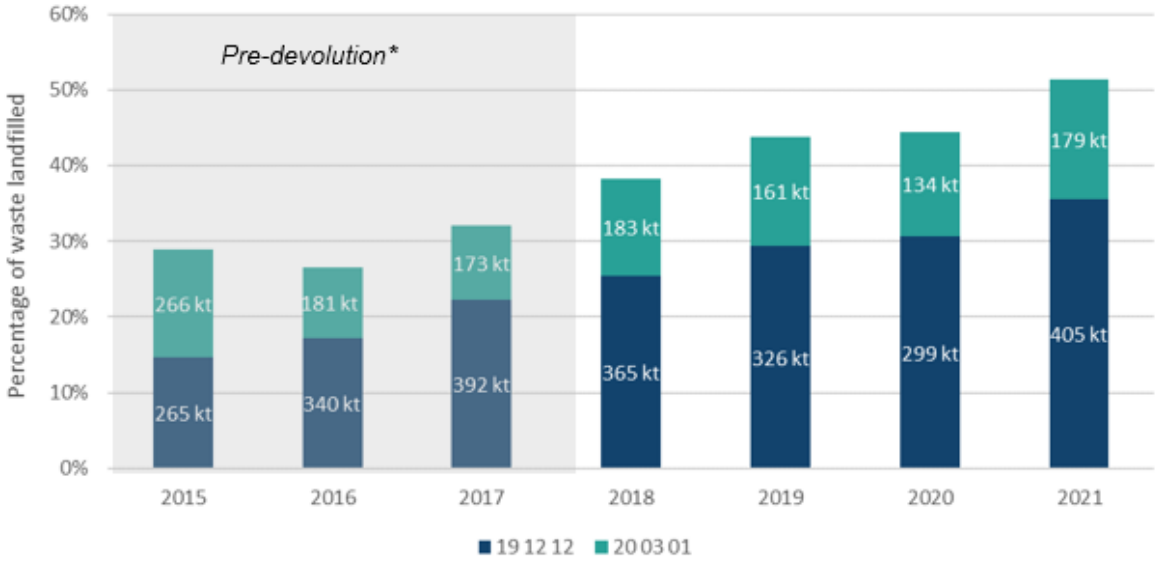
4.28 In contrast to the number of landfill sites and operators, a different trend is illustrated in Figure 8, which presents landfilled waste under the standard and lower rates. Standard rate landfill tonnages decreased from FY18-19 to FY20-21 (from 484kt to 322kt). Lower rate landfill tonnages also declined over the same period (from 562kt to 521kt), though to a lesser extent. The difference in rates of decline between standard and lower rate tonnages could correspond with there being less financial incentive to divert lower rate waste streams from landfill. In FY21-22, both the standard and lower rate landfill tonnages increased (to 446kt and 599kt respectively). This increase may reflect the increase in waste from mechanical treatment (i.e. EWC code 191212) and, to a lesser extent, mixed municipal waste (i.e. EWC code 200301). As shown in Figure 9, the total of both wastes combined comprised 51 per cent on total landfilled waste in Wales in 2021, compared to 29 per cent in 2015. For waste from mechanical treatment, there is likely to be limited alternative treatments beyond landfill.

Figure 8: Landfilled tonnages (kt) by LDT rate in Wales, 2018/19 – 2021/22



Source: Welsh Government (2023). Landfill Disposals Tax Statistics

Figure 9: Percentage of landfilled waste comprising 191212 and 200301 in Wales, 2015-2021



**Grey area refers to the period pre-devolution of LDT*

Source: NRW (2022). Waste Permit Returns Data Interrogator

4.29 To further understand how LDT legislation has impacted the viability of landfill and waste businesses in Wales compared with the rest of the UK, data were gathered

through qualitative interviews. Three landfill site operator interviewees believed that the Welsh legislation is overly complex in comparison to the other nations, creating a financial and administrative burden on operators. Identified examples of the burden included the laborious returns process (which could indicate the differences in exemptions and reliefs between LDT and LfT, paragraph 4.5) and paying extra tax if waste was determined to be in a different category. One of the interviewees explained that HMRC had changed its guidance in 2016/2017 to make things easier for operators (e.g. in terms of restoration). In contrast, in Wales and Scotland, everything is taxable unless proved otherwise, creating a lot of work for operators. Whilst three other landfill site operator interviewees noted that the tax had caused a decline in landfill sites over time, they did not specify a reason for this.

"We often make the comment that considering we have two landfill sites in Wales, we spend about 50 per cent of our landfill tax working time on Welsh issues compared to Scotland (one landfill site) and England (20 landfill sites)."

Landfill site operator interview, 2022.

"My team spends ridiculous time preparing on one site compared to the rest of the UK [which is a] burden on business. The Welsh chose to write and implement this tax for the sake of making it different".

Landfill site operator interview, 2022.

"They [the WRA] interpret the regulations and the regulations are too complicated. It all needs to be simplified".

Landfill site operator interview, 2022.

4.30 Three commercial collectors / other infrastructure operator interviewees felt that LDT had been a financial driver to their businesses. Interviewees explained that the increasingly high cost of sending waste to landfill had meant a push for cheaper – and usually more sustainable – solutions (which could reflect the decline in landfilled tonnages in FY2018/19 to FY2020-21, Figure 8). However, one of the interviewees cautioned that a potential carbon tax (due to the UK emissions trading scheme expanding to include EfW) could increase gate fees and cause an incentive for waste to be diverted back to landfill.

"The clever bit of the tax was the relatively short transition period that was loaded so decisions and investments could be started immediately. It is a great example of what should be done elsewhere for the carbon/climate change agenda".

Commercial collector / other infrastructure operator interview, 2022.

"Without LDT it's debatable whether our [anaerobic digestion] business would exist."

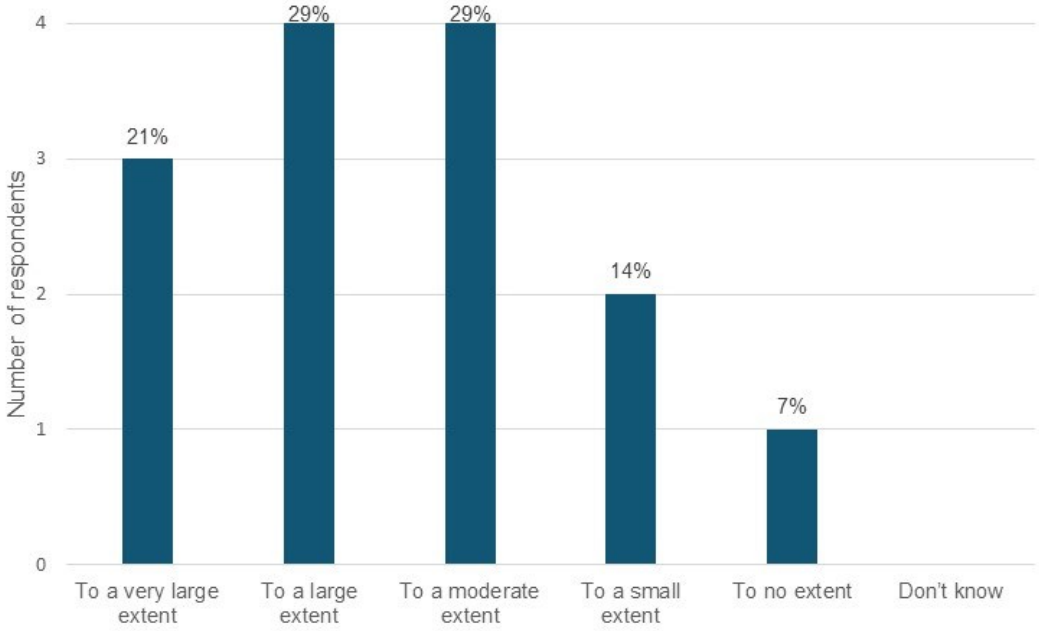
Commercial collector / other infrastructure operator interview, 2022.

"With LDT… the cost to send [waste] to landfill is extremely high. [We have] changed how we prepare our waste – dry it, take out as many recyclable materials as possible, etc. [We have] invested in better water treatment plants etc. to get as much as possible out of the waste stream. This has all driven by costs that directly relate to LDT."

Commercial collector / other infrastructure operator interview, 2022.

4.31 In general, surveyed respondents (across different waste treatment facilities) believed that LDT had been a financial driver/consideration to their organisation. Over half (58 per cent or eight respondents) believed that LDT had been a driver/consideration to either 'a large' or 'a moderate' extent (Figure 10).

Figure 10: To what extent has the tax been a financial driver / consideration to your organisation?



Respondents: Alternative waste treatment providers, commercial waste collectors, skip hire providers, waste transfer providers (n=14)

Unintended consequences

B2. What has changed in Wales as a result of the Landfill Disposals Tax Act?

- B2.1 Identify areas where the legislation is working well, had a positive impact (and positive unintended consequences) and is for example, encouraging compliance.
- B2.2 Identify areas where the legislation is not working well, had a negative impact and encouraging undesired impacts or unintended consequences.

4.32 In the qualitative interviews and the survey, stakeholders were asked for their opinions on the positive and negative impacts of LDT.

Positive impacts

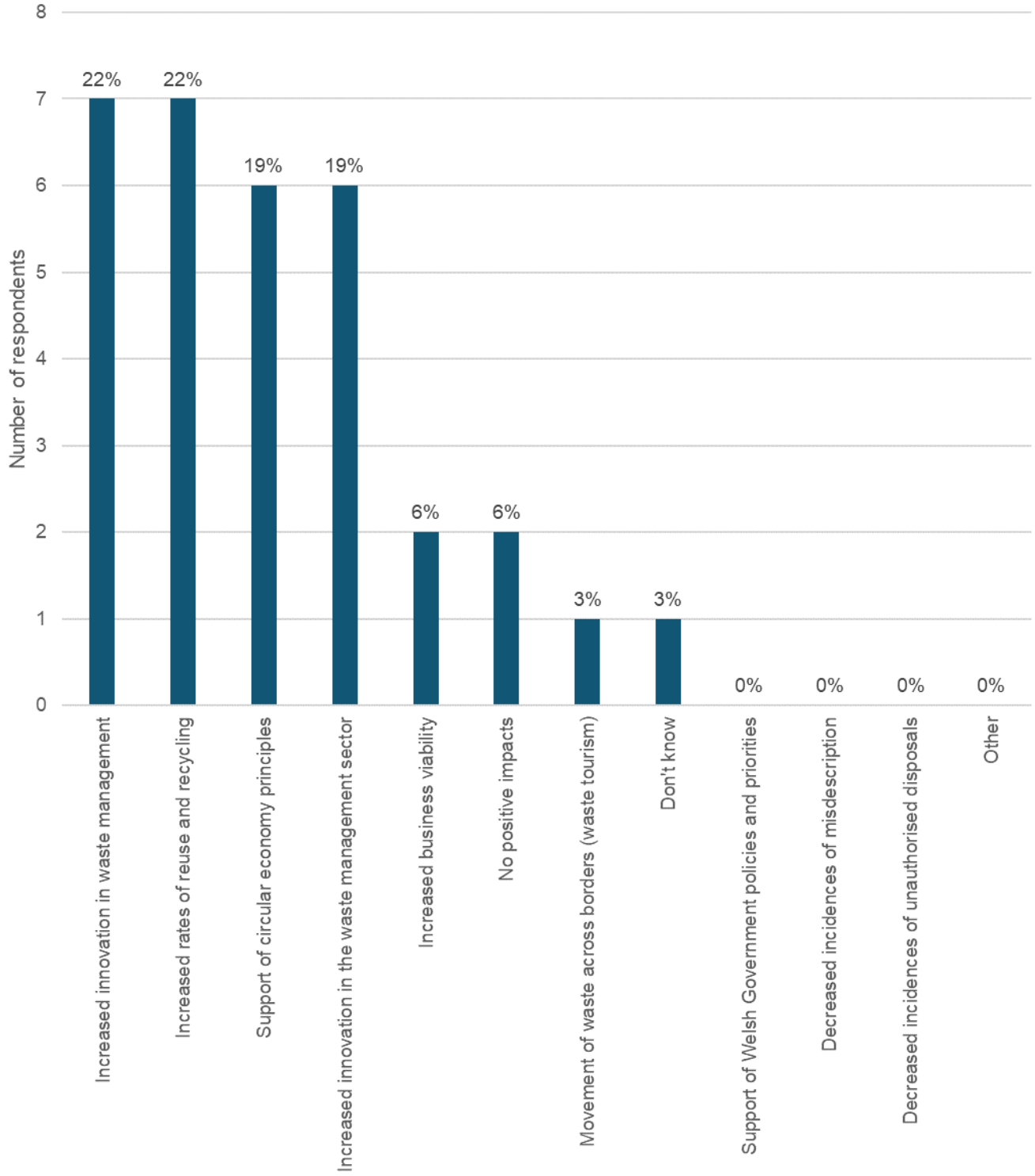
4.33 Fourteen interviewees (across stakeholder groups of landfill site operator, commercial collector / other infrastructure operator, producers and trade associations) felt that LDT had led to increased sustainable waste management practices and resulted in waste being driven up the hierarchy. Interviewees explained that LDT had increased capacity for recycling and diverted materials from landfill – as reflected in Wales' high recycling rate (see section 3 – recycling and reuse). Interviewees also added that LDT had encouraged investment in technology, increased employment and led to community projects via the LDTCS.

"[LDT has] diverted a huge percentage of previously landfilled material. This is good for the environment and the people who live in Wales at both a local and global level (because of the carbon footprint being reduced)."

Commercial collector / other infrastructure operator interview, 2022

4.34 The positive views of interviewed stakeholders are reflected in the survey results (Figure 11). Positive impacts that were frequently cited included 'increased innovation in waste management' (22 per cent or seven respondents), 'increased rates of reuse and recycling' (22 per cent or seven respondents) and 'support of circular economy principles' (19 per cent or six respondents).

Figure 11: In your opinion, what have been the positive impacts of LDT on the wider Welsh waste sector?



Respondents: Landfill site operators, alternative waste treatment providers, commercial waste collectors, skip hire providers, waste transfer providers (n=32)

Lack of impacts

4.35 Three other interviewees (regulators / government bodies and a commercial collector / other infrastructure operator) believed that there had been minimal change as a result of LDT (e.g. no changes in the amount of waste received) – though it was caveated that it may be too early to identify impacts that can be directly attributed to LDT.

"I doubt there has been any significant change that is directly linked or even indirectly to LDT. I would argue that the Welsh waste management today is a reflection of the strategies that were set in place some 10 years ago and that tax is just part of that conversation".

Commercial collector / other infrastructure operator interview, 2022

Negative impacts

4.36 15 interviewees (across stakeholder groups of landfill site operators, commercial collectors / other infrastructure operators, producers, environmental organisations) noted the negative impacts or unintended consequences of LDT on waste crime and fraud (discussed further in section 3 – waste crime). Interviewees believed that the complexity of the legislation and the gaps between rates led to loopholes which could be exploited by unscrupulous operators (e.g. with misdescription and illegal landfills). One landfill site operator felt that the enforcement power within the legislation was not being utilised to its full extent and that illegal disposals were not being dealt with appropriately.

"Anything that restricts how easy it is for people to get rid of material has the potential to incentivise criminal behaviour."

Trade association interview, 2022.

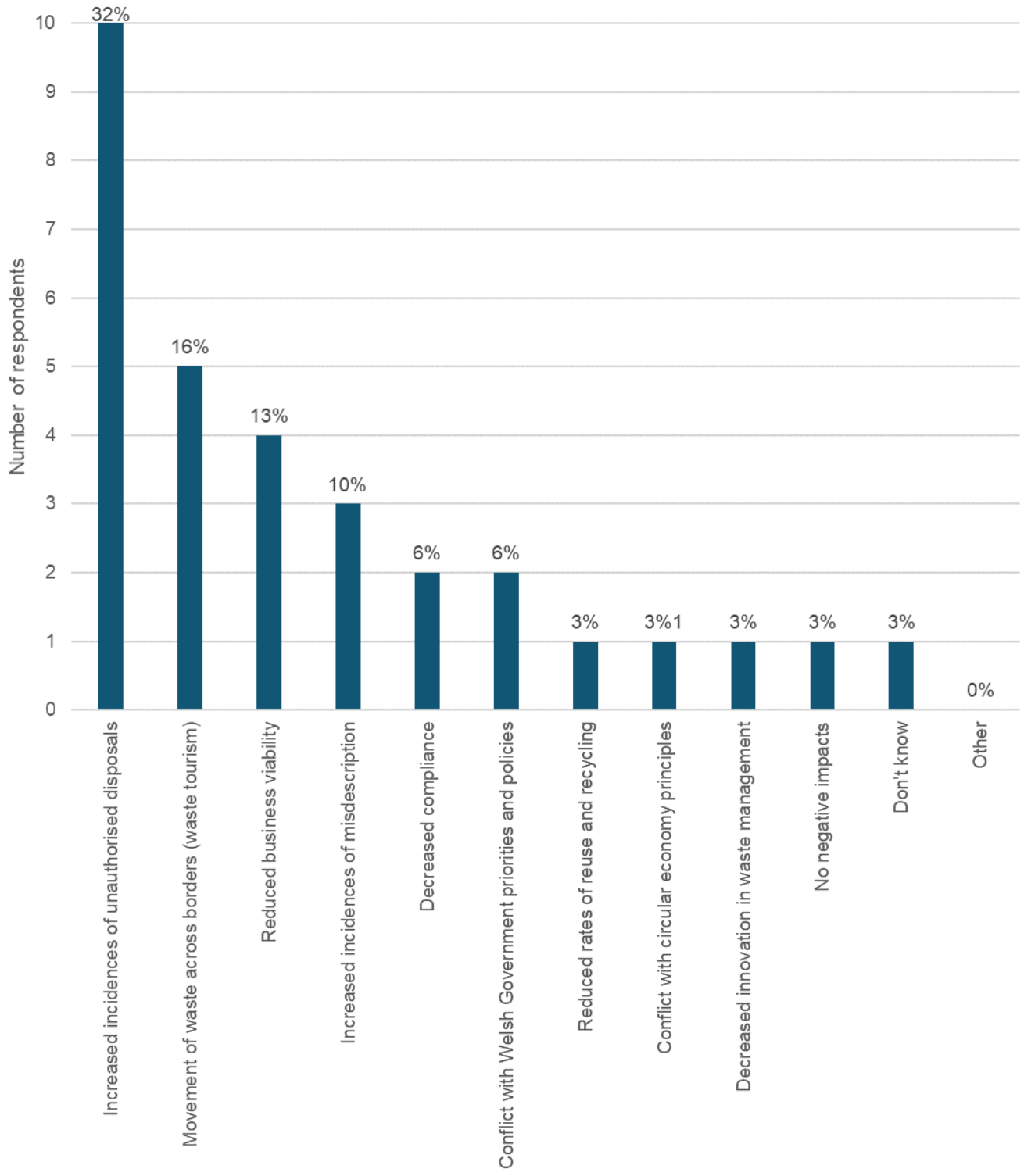
4.37 Three interviewees (producer, landfill site operator and commercial collector / other infrastructure operator) referred to the cost burden associated with the tax. The interviewees explained that the tax had led to an increased cost of waste disposal for the producer, which was believed to be particularly problematic for small businesses.

4.38 Three interviewees (landfill site operators and environmental organisations) referred to how the revenue of the tax was used. The interviewees noted that, as the revenue went into a central pot, it was not being used directly within the local community. The interviewees did not acknowledge the role of the LDTCS in their response. One landfill site operator interviewee believed that a proportion of revenue should be assigned into a fund to improve and increase regulation.

4.39 Some interviewees felt that LDT was not sufficiently forward-looking. One trade association interviewee believed that the tax did not consider the huge landfill legacy in Wales (though the implications of this lack of consideration were not specified). A commercial collector / other infrastructure operator interviewee stated that the tax lacked a long-term plan and there was a need to prevent leakage back into landfill as a result of instruments such as the carbon tax (due to the UK emissions trading scheme expanding to include EfW).

4.40 The negative views of interviewees were generally reflected in the survey results (Figure 12). The most commonly identified negative impact was ‘increased incidents of unauthorised disposals’ (32 per cent or 10 respondents), in line with the findings of the interviews. Interestingly, despite misdescription being highlighted as a negative impact by multiple interviewees, only 10 per cent (three) of survey respondents identified it as a negative impact.

Figure 12: In your opinion, what have been the negative impacts of LDT on the wider Welsh waste sector?



Respondents: landfill site operator, alternative waste treatment providers, commercial waste collectors, skip hire providers, waste transfer providers (n=31)

Industry behaviour and innovation

B3. How has the legislation influenced industry behaviour and innovation?

- **B3.1** What have been the main changes in the industry in terms of behaviour and innovation as a result of LDT since its introduction in 2018?
- **B3.2** Has the influence on behaviours and innovation differed since LDT replaced LfT?
- **B3.3** Has the tax been a financial driver to businesses?

4.41 Overall, interviewees believed that LDT (and landfill taxes in general) had influenced industry behaviour and innovation. However, interviewees also stressed that other drivers, particularly the wider policy landscape, have had a greater influence on industry behaviour and innovation.

Investment and innovation in alternative and more sustainable waste treatment options

4.42 Within the qualitative interviews, stakeholders discussed changes in behaviour and innovation as a result of LDT. Interviewees did not believe that there had been a marked difference in behaviour and innovation since LDT replaced LfT in Wales. As exemplified by one environmental organisation interviewee, innovation was high prior to LDT due to the rapid increase in the escalator rate (paragraph 1.4). As such, the perspectives presented below most likely pre-date LDT introduction in 2018.

4.43 Stakeholders noted that there had been increased innovation and investment in EfW, material recycling facilities (MRFs), composting, anaerobic digestion, and mechanical biological treatment (see discussion on the viability of landfill/waste businesses, paragraphs 4.30 to 4.31). However, there were mixed views across stakeholders as to whether LDT was responsible for such changes.

4.44 Some stakeholders (three interviewees, predominately landfill site operators) believed that LDT was, a strong driver of innovation and investment into such aforementioned alternative technologies.

"*The waste industry has seen massive investment because no one wants to pay £100/tonne of landfill tax. What you end up with is that being invested in [alternative] equipment."*

Landfill site operator interview, 2022

"Whilst finances and the sustainability agenda (now the circular economy) have a key role, the main driver originally was the landfill tax."

Landfill site operator interview, 2022

4.45 Six stakeholders (producers, commercial collectors and other infrastructure operators, and trade associations) believed that changes in innovation and behaviour were not solely down to LDT. Stakeholders emphasised the role of the overall policy landscape which has collectively encouraged the diversion of waste from landfill. Examples of such policies included statutory recycling targets, decarbonization targets and the Landfill Allowance Scheme (LAS).

"Our investment portfolio today is all about carbon, it is not about the landfill tax. Therefore, we are now being dictated to by a very different set of parameters."

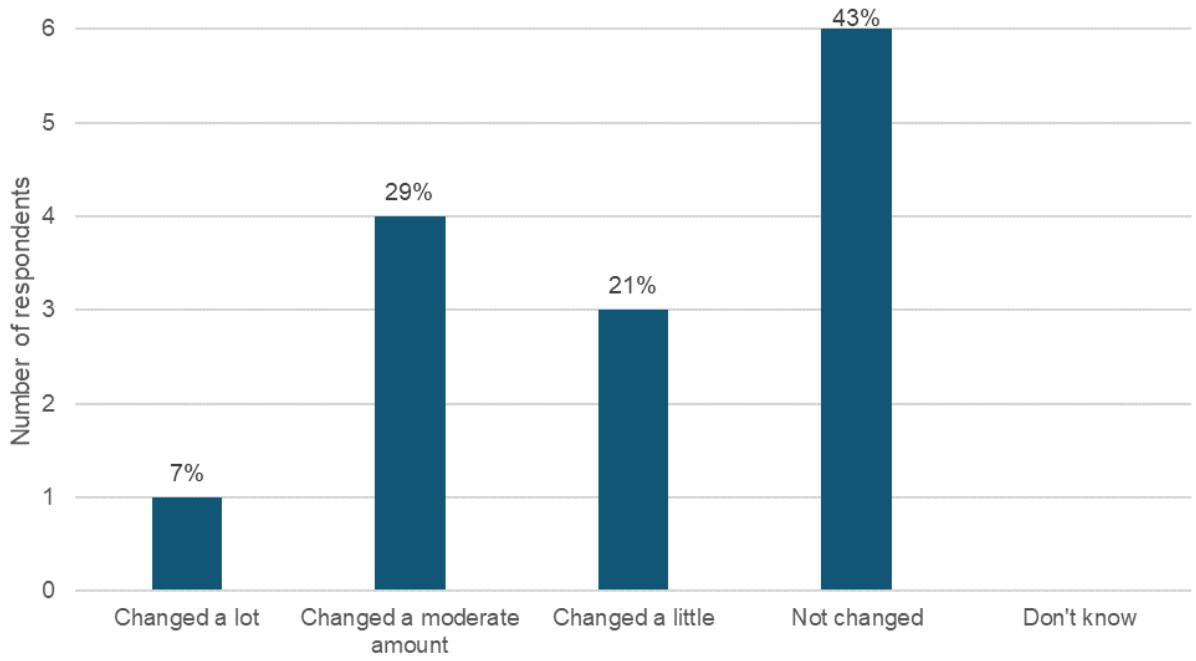
Commercial collector / other infrastructure operator interview, 2022.

"It [LDT] has done its purpose but there are now other things taking over. Companies want to be seen to do better in terms of recycling etc.".

Trade association interview, 2022.

4.46 The varied views of interviewees are reflected in the survey results (Figure 13 13). Approximately 36 per cent (or five in total) of respondents believed that waste management behaviour and innovation had 'changed a lot' or 'changed a moderate amount'. In contrast, 64 per cent (or nine in total) of survey respondents believed that behaviour and innovation had either 'changed a little' or 'not changed'.

Figure 13: How much has waste management behaviour and innovation changed since LDT replaced the landfill tax in 2017?



Respondents: Landfill site operator, alternative waste treatment providers, commercial waste collectors, skip hire providers, waste transfer providers (n=14)

5. Key findings – broader questions

Lessons learned from other UK Countries

C1. Are there lessons learned from other UK countries which could inform ways to further behaviour change in relation to landfill taxes?

5.1 To date, landfill tax legislation in other UK countries has not been the subject of formal evaluation or review. The 2021 LfT Call for Evidence did not include lessons learned. Therefore, this section focuses on insights from stakeholders, gathered through qualitative interviews.

5.2 Interviewed stakeholders from government bodies in other UK countries were asked whether there were any lessons learned that could be applied to Wales. Whilst some general comparisons to other UK countries were made (as discussed throughout this report), interviewees were not able to identify any specific lessons learned.

5.3 One interviewee explained how UK countries collaborated on issues related to landfill tax. One interviewee explained that knowledge was regularly shared

between UK countries on 'tri-national calls'. These calls were used to exchange strategies, information on methods to interpret the rules and legislation, and approaches for testing regulatory powers under the legislation. They also explored how intelligence could be shared during investigations (particularly where multiple people were being investigated within a single case).

Alignment with wider environmental policy

> **C2.** How aligned is LDT with wider environmental policy?
>
> **B6.** What impact has LDT had on progress towards meeting existing environmental targets e.g. 2025 and 2050 'Beyond Recycling Strategy' including what has been effective and not as effective?

5.4 As part of the desktop review and qualitative interviews, LDT was reviewed for alignment against key environmental policies, legislation and strategies relating to waste management, circular economy and net zero in Wales. These are discussed in the succeeding paragraphs.

Waste to landfill and recycling rates

5.5 The desktop review identified clear LDT contributions to Welsh Government priorities, in particular, reduced waste to landfill, increased recycling rates, and reduced pressure on natural resources. These are prominent themes within Taking Wales Forward,[56] Prosperity for All,[57] Towards Zero Waste,[58] Beyond Recycling,[59] the Natural Resources Policy,[60] the Environment (Wales) Act[61] and Net Zero Wales Carbon Budget 2 (2021 to 2025)[62]. Within the Well-being of Future Generations (Wales) Act, there is also a national indicator on the amount of waste generated that is not recycled.[63]

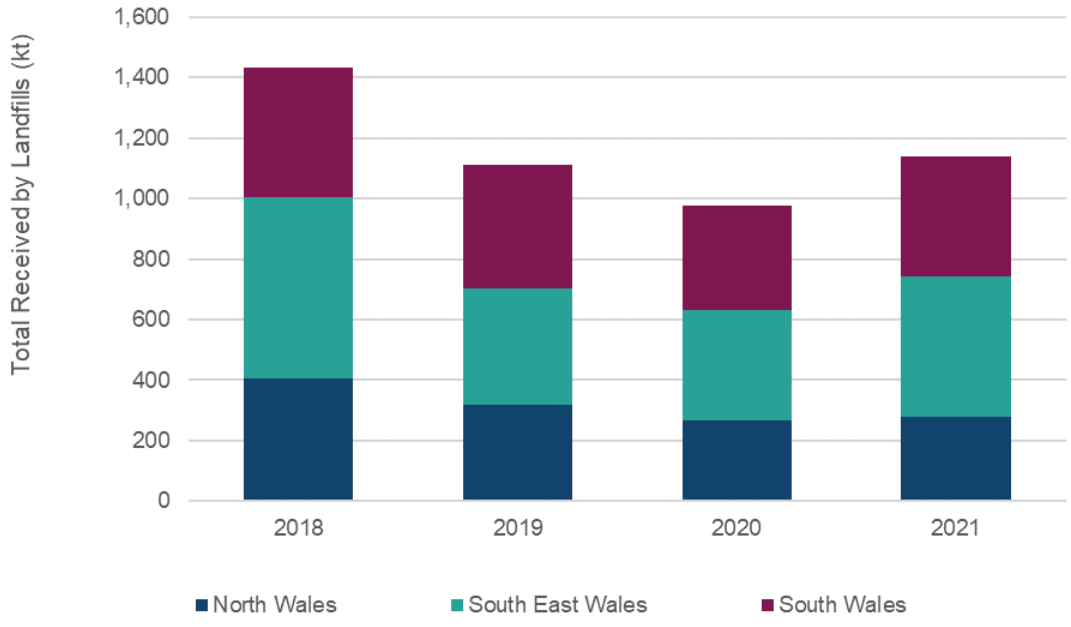
5.6 The closest alignment to LDT is arguably with Beyond Recycling, Wales' strategy to transition to a circular economy that was introduced in 2021 (and before that,

[56] Welsh Government (2016). Taking Wales Forward
[57] Welsh Government (2019). Prosperity for all: A Climate conscious Wales
[58] Welsh Government (2010). Towards zero waste: our waste strategy
[59] Welsh Government (2021). Beyond Recycling 2021
[60] Welsh Government (2018). Natural Resources Policy
[61] Welsh Government (2016). Environment (Wales) Act 2016
[62] Welsh Government (2021) Net Zero Wales Carbon Budget 2 (2021 to 2025)
[63] Welsh Government (2015). Well-being of Future Generations (Wales) Act 2015

Towards Zero Waste in 2010). Both strategies set statutory recycling targets and have a target to achieve zero municipal waste to landfill by 2025.

5.7 As presented in Figure 14, there was a downward trajectory in total waste sent to landfill in Wales between 2018 and 2020 (1,431 to 979 kt, a 32 per cent decrease). There was an increase in waste sent to landfill between 2020 and 2021 in Wales (979 to 1,138 kt, a 16 per cent increase), which may be attributable to the COVID-19 pandemic or increased levels of waste imported from England (as shown in Figure 6) It should be noted that total waste did decrease during the COVID-19 pandemic lockdowns (e.g. March – June 2020) but increased following the easing of restrictions. Such nuances are not illustrated within Figure 14Figure 14 due to the use of annual data. Levels of waste sent to landfill in 2021 remained less than in 2018, with an overall decrease of 35 per cent. The decrease in waste to landfill between 2018 and 2020 was particularly evident in south-east Wales. In this region, waste received by landfills decreased by 39 per cent. The data present the right trajectory toward achieving zero waste to landfill. Further detail on waste sent to landfill is presented in sections 3 (uptake of alternative technologies) and 4 (viability of landfill) of this report.

Figure 14: Total waste received (kt) by landfills, based on permit returns, categorised by Welsh Region, 2018-2021

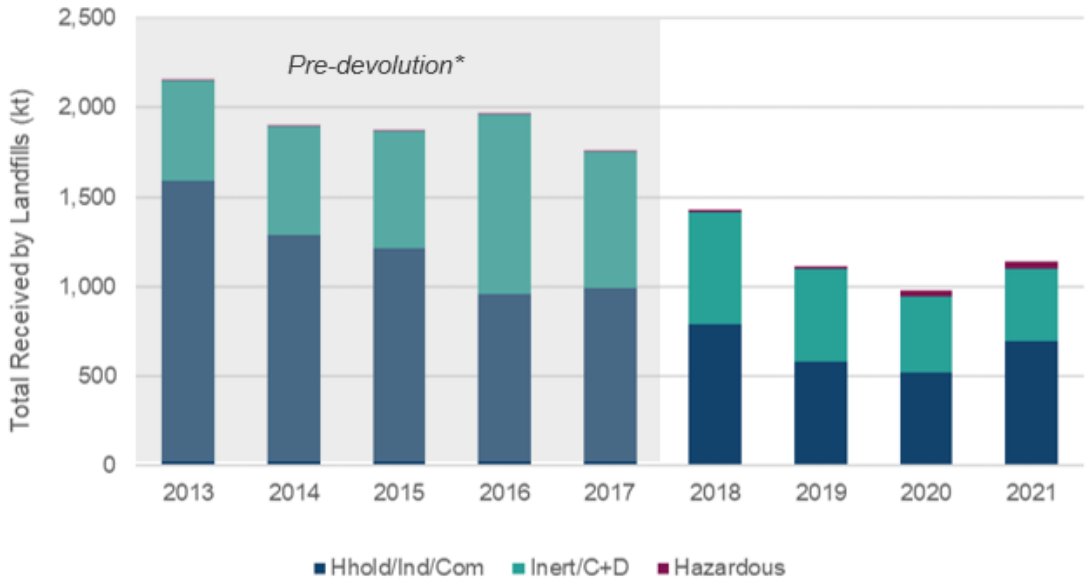


Source: NRW (2022). Waste Permit Returns Data Interrogator

5.8 In terms of the types of waste received by landfills, Figure 15 illustrates that the quantities of hazardous, household, C&I, inert, and C&D waste received by landfills decreased between 2018 and 2020, indicating progress towards zero waste to landfill by 2025. Between 2020 and 2021, the quantities of all the aforementioned types of waste received by landfills increased. In particular, the quantity of household and C&I waste received increased by 34 per cent. As stated above, this may be attributable to the COVID-19 pandemic, though (as mentioned in paragraph 5.7) due to the use of annual data, nuances in levels of waste are not represented within Figure 15 (e.g. C&D and C&I waste streams decreased during the lockdowns, but increased following the easing of restrictions).

5.9 According to NRW, the C&D sector is on course to achieve the waste prevention, recycling, and landfill targets set by the Welsh Government.[64] This is key as C&D waste forms the second highest proportion of waste received by landfills (the highest proportion being from waste and water treatment (EWC chapter 19, see Figure 9). Further detail on C&D and C&I wastes is discussed in section 3 – uptake of alternative technologies.

Figure 15: Total waste received (kt) by landfill categorised by waste type in Wales, 2013 – 2021



**Grey area refers to the period pre-devolution of LDT*
Source: NRW (2022). Waste Permit Returns Data Interrogator

[64] Natural Resources Wales (2019). Construction and demolition waste survey for 2019

5.10 A further key component of achieving zero waste to landfill is increasing recycling rates. Beyond Recycling set out a target of increasing recycling rates in Wales to 64 per cent pre-2025, and to 70 per cent by 2025. Data between 2017 and 2021 illustrated that local authority collected municipal waste recycling rates in Wales increased from 63 per cent to 65 per cent - thus exceeding the pre-2025 target of 64 per cent.[65] At an LA level, 19 out of 22 LAs met the pre-2025 target and, of those, four LAs had already met the 2025 target. Further detail on recycling rates is provided in section 3 – impact on recycling and reuse.

5.11 The alignment of LDT with Welsh policies concerning waste reduction was iterated by regulators / government bodies and commercial collectors / other infrastructure operators within qualitative interviews. Furthermore, stakeholders believed that LDT would align well with extended producer responsibility (EPR), deposit return scheme (DRS) and non-domestic premises recycling regulations policies (when they are introduced) in driving waste away from landfill.

"Wales has had more policy certainty with statutory targets and collection preferences which has made the Welsh endpoint far more likely than in England. LDT fits nicely amongst a myriad of policy. In Wales, you have had all of the other policy frameworks which means you've ended up with more of the right infrastructure being built and more feedstock capture being delivered in the right way. I'd say you have had more progress because everything's more joined up. In England, the LfT has been significant at times when surrounding policy is lacking and there have been no other levers."

Commercial collector / other infrastructure operator interview, 2022.

Net Zero

5.12 The desktop review identified LDT's alignment to Welsh Government priorities and policies around achieving net zero, the focus of Wales' Net Zero Wales Plan[66] and a prominent theme in Taking Wales Forward.[67] As stated within the Net Zero Wales Plan, emissions from waste declined by 64 per cent between the base year (1990)

[65] Welsh Government (2021). Statistical First Release: Local Authority Municipal Waste Management, 2020-21
[66] Welsh Government (2021) Net Zero Wales
[67] Welsh Government (2016) Taking Wales Forward

and 2019 and 403,000 tonnes of CO_2 emissions were avoided through local authority recycling efforts in 2019/20. Although the impact cannot be easiest isolated, LDT is likely a key contributor.

Wider policies

5.13 LDT also supports Welsh Government priorities and policies relating to a sustainable economy, a prominent theme within Taking Wales Forward. It could be argued that the tax contributed to a 'prosperous and secure Wales' (one of the strategy's aims) through providing business security and a level playing field for legitimate waste businesses (through minimising unauthorised disposals), alongside promoting a low carbon economy.[68,69] Additionally, LDT contributed to the same theme through the establishment of the LDTCS. As discussed in paragraphs 5.14 to 5.27, the LDTCS enabled the support of community-led projects, the promotion of skills development, community energy, and job creation.

The Landfill Disposals Tax Communities Scheme Review

C4. What impact has the Landfill Disposals Tax had on waste sector behaviour and on wider environmental outcomes based on the independent review of the Landfill Disposals Tax Communities Scheme (LDTCS)?

5.14 LDTCS is a Welsh Government grant funded programme that supports local community and environmental projects situated in close proximity to landfill sites or waste transfer stations. It is funded through a statutory scheme based on the allocation of revenues raised through LDT. Of the Government's revenue, £1.5 million in funding is allocated to LDTCS annually. An independent review of LDTCS was carried out by Eunomia in 2022.[70] This review covered the period from 2018 to 2021.

5.15 Funded projects must promote and support one or more of the following themes:

- diversion of waste from landfill, promoting awareness and best practice to reduce the amount of waste produced;

[68] Welsh Government (2017). Landfill Disposals Tax (Wales) Bill: Explanatory Memorandum
[69] Welsh Government (2020). Explanatory Memorandum to the Landfill Disposals Tax (Tax Rates) (Wales) (Amendment) Regulations 2020
[70] Eunomia (2022). Review of the Landfill Disposals Tax Communities Scheme

- biodiversity by creating resilient ecologic networks; and
- wider environmental enhancements, bringing wider community benefit through improving quality of place.

5.16 The paragraphs below discuss the impact of LDTCS on waste sector behaviour and wider environmental outcomes.

Waste sector behaviour

5.17 LDTCS does not explicitly aim to influence the behaviour of the waste management sector. However, it was found to have a positive influence on individual waste behaviours (e.g. community members) through its emphasis on diverting waste from landfill and waste minimisation.

5.18 LDTCS has funded community-driven projects with a focus on removing waste from nature and heritage sites, increasing engagement around recycling and correct waste management to prevent fly-tipping, and preventing waste from landfill through refurbishment, repair, and redistribution initiatives. Projects include the Repair Café Wales (which aims to reduce waste, share practical skills, and strengthen communities by providing a local hub for volunteers to fix household items); a 'library of things' (a community-based loan service for household items) to minimise waste; the expansion of Refill Cymru (to encourage and support people to move towards refillable and reusable systems); and the development of long-life products for the local community made from ocean plastics.

5.19 At the time of the review, LDTCS has funded 962 initiatives that encourage prevention, reuse, recovery, and recycling of waste; 768 initiatives that engage and support understanding to enable waste to be seen as a resource; and 66 initiatives that reduce food waste and support initiatives such as composting.

5.20 The contribution of LDTCS to waste minimisation was reflected in the LDT review. Documents highlighted that LDTCS projects have focused on waste prevention , particularly in vulnerable communities.[71] This suggests the complementarity between LDT and LDTCS and alignment with wider Welsh Government policy and

[71] Welsh Government (2022). Working Together to Achieve Net Zero: All Wales Plan 2021-2025

legislation that seeks to divert waste from landfill and promote a circular economy (as discussed in paragraphs 5.5 to 5.11).

Wider environmental outcomes

5.21 LDTCS was found to have positively supported wider environmental enhancements, specifically in areas relating to biodiversity and carbon reduction.

5.22 LDTCS project contributions to biodiversity are set out below against key themes.

- **Provision of knowledge and upskilling.** Projects have increased knowledge and upskilled individuals in areas relating to biodiversity. Examples include educational garden projects in sustainable urban food and forest schools.
- **Species recovery and habitat protection.** Projects have delivered targeted interventions to help species recovery and protect habitats. Examples include improving conditions for fungi, developing wetland and heathland habitats, and introducing pine martens to suppress grey squirrel numbers.
- **Nature based solutions.** Several projects have supported nature-based solutions through increasing canopy cover and developing green infrastructure in and around urban areas. Examples include the development of Tiny Forests (dense, fast-growing native woodland), the regeneration of rare beech woodlands, the creation of nature parks, and the installation of a green wall.
- **Support for pollinators.** Projects have developed diverse and connected habitats to support pollinators, including the development of wildlife corridors through the restoration of hedgerows, implementation of community-led gardens, and the creation of a gardening club which increased public engagement with, and understanding, of biodiversity.

5.23 At the time of the review, LDTCS has funded 2,275 initiatives that support biodiversity aims.

5.24 In terms of carbon reduction, areas of LDTCS project focus included community energy and a low carbon economy through installation of energy efficient heating systems and insulation. Projects also improved green spaces (e.g. hill fort path improvement in Ceredigion) and raised awareness of global issues (e.g. City to Sea engaged with the global issue of plastic pollution).

5.25 Landfill site operator interviewees noted the positive impacts of LDTCS, particularly in terms of community benefits, though again they did not state that the scheme had impacted their behaviour. However, one environmental organisation interviewee did advise that some of the funding was not being used for the appropriate projects (e.g. the building of new village halls or car parks).

5.26 A key question is whether these initiatives would have gone ahead without LDTCS funding (additionality). As part of the LDTCS review, a survey with LDTCS beneficiaries identified several initiatives that were unlikely to have gone ahead without LDTCS support. Whilst alternative funding sources exist, few sources specifically fund local projects focused on environmental outcomes. Alternative funding was considered to have greater competition, making it harder to access. That being said, the review also identified several projects that were able to go ahead without LDTCS funding.[72]

5.27 The LDTCS review recognised that LDT revenue in Wales is expected to fall from £45 million in 2021-22 to £35 million in 2026-27. The review also noted that the volume of waste sent to landfill is expected to decrease in the long term, leading to an expected reduction in revenue from LDT.[73] While this would impact on the future funding of the LDTCS to some degree, the LDTCS grant programme is funded through overall Welsh Government revenue; LDT revenue is not the only element that will impact future funding. Despite this, LDTCS is still linked to LDT and therefore the contributions of the LDTCS to waste minimisation and wider environmental outcomes (discussed above) can be somewhat attributed to LDT.

[72] Projects that applied to LDTCS for funding but were unsuccessful.
[73] This is under a scenario that assumes tax rates remain constant or experience minor increases as landfill volumes decrease.

6. Conclusions

6.1 The aim of this study was to review the effectiveness of LDT in Wales and identify any lessons learned since its implementation in 2018.

6.2 Isolating the effectiveness of LDT was challenging for two reasons: i) it replaced the LfT in Wales in 2018 and aligned its tax rates and waste categories with those of its predecessor. Some stakeholders found it difficult to consider the effectiveness of landfill tax only in the period since it was devolved, and ii) it sits within a broader policy landscape that aims to drive waste away from landfill and towards alternative treatment.

6.3 The findings from this study show that LDT is well aligned with other Welsh Government environmental policies and priorities and has made a positive contribution towards waste management priorities, but other factors have likely played a greater role in encouraging positive impact for reuse, recycling, and uptake of alternative technologies. Though LDT may have contributed to this increased recycling, stakeholders believed that other driving factors (specifically political signals that landfill is an unviable option and statutory local authority recycling targets) had a greater impact. Furthermore, for the reasons outlined above, the direct impacts are difficult to disentangle from other interventions. Nevertheless, it is a vital part of a package of policy measures that is collectively driving waste away from landfill and up the waste hierarchy (i.e. towards prevention, re-use, recycling and recovery).

6.4 Stakeholders suggested improvements to LDT for consideration, which were as follows:

- Introducing multiple rates or a middle rate of tax to account for the different environmental burdens of individual materials and the issue of misclassification.
- Changing the rates for which certain materials are taxed to ensure LDT has the desired effect (for example, contaminated soils can be easily passed off as clean soils which attract the lower rate, incentivising the material to be sent to landfill).

- Reducing the administrative burden that LDT places on landfill site operators (which was considered to be much higher than for landfill legislation in other parts of the UK).
- Assigning a proportion of the tax revenue to improving and increasing LDT associated regulation.

6.5 Any changes, particularly those related to rate changes, would need to be considered in the context of waste management more broadly given the alignment of LDT with landfill tax legislation in other UK countries.

6.6 The research team found it difficult to engage appropriate stakeholders. This was particularly true of landfill site operators, commercial waste collectors, alternative waste infrastructure providers and large waste producers. Often businesses did not feel that it was a topic they were able to comment on. It appears that this was also true of a previous LDT consultation, undertaken in September 2015, where the number of responses categorised as 'business' was much lower than other stakeholder groups. Further thought will be needed on how to increase engagement ahead of any future research projects on this topic. For example, exploring the use of incentives to participate in research or greater involvement from Welsh Government in recruitment (to convey the importance of the research).

6.7 Lastly, several research questions could not be fully answered due to a lack of data (e.g. questions relating to misdescription, waste crime, and the value and quantity of unauthorised disposals). Increased availability of these data could support decision-making processes for improvements in the legislation itself (where it is possible to make changes) or in the management of the tax.

Appendix A: List of stakeholder groups

This outlines the list of stakeholder organisations engaged as part of the review, either as direct participants in primary research (via surveys and/or interviews) or supported the primary research (by disseminating surveys or identifying potential stakeholders we could speak to).

- Biffa
- Biogen
- Brisco Waste Disposal
- Cardiff City Council
- Chartered Institution of Wastes Management (CIWM)
- Conwy Council
- CWM Environmental
- Defra
- DS Smith
- Enifinium
- FCC Environment
- Fox Brothers
- Greenacres Skip Hire
- Gwynedd Council
- Gwynedd Skip & Plant Hire
- HM Revenue and Customs (HMRC)
- HM Treasury
- Humphreys Waste Recycling
- JLA Disposal
- Mineral Products Association (MPA)
- Natural Resources Wales (NRW)
- Newport City Council
- Potter Group
- Powys County Council
- Revenue Scotland
- Scottish Environment Protection Agency (SEPA)
- Severn Trent Green Power
- Smiths Waste Management
- SUEZ Recycling and Recovery
- Treborth Leisure
- United Resource Operators Consortium (UROC)

- Veolia (UK)
- Welsh Environmental Services Association (WESA)
- Welsh Government
- Welsh Local Government Association (WLGA)
- Welsh Revenue Authority (WRA)
- Wildlife Trusts Wales
- Williams a Williams CYF
- Wrecsam Wrecycled

Appendix B: Topic guides

Environmental Organisation Topic Guide

Introduction

1. Please give me a brief overview of your organisation and role.
   Prompt: How does your work relate to LDT?

LDT rates: We would like to draw on your experience to understand the impact of LDT rates had on how waste is managed within the waste sector (including unauthorised disposals) over the last five years.

2. LDT standard and lower rates have historically been increased to align with projected inflation. To what extent do you think this approach has had an impact on diverting waste away from landfill?
   Prompt: Are there any examples/cases where increased recycling rates are linked to the raising of the standard and lower rates in line with inflation?

3. As you will be aware, within Wales, a standard and lower rate of tax exist. As of 2021/2022 financial year, these stood at: £98.60 standard rate; £3.15, lower rate. In your opinion, how has the difference between these two LDT rates influenced how waste is managed within the waste sector?
   Probe: are the rates high enough to provide an incentive to drive recovery and corresponding diversion from landfill?

4. LDT applies different tax rates to different waste categories. This relates to the environmental impact of these waste streams, where the waste streams with lower negative environmental impacts receive the lower rate, while those with higher negative impacts receive the standard rate and unauthorised disposals are set at 150 per cent of the standard rate.
   From your perspective, to what extent do you think the different LDT rates (standard, lower, and unauthorised disposal rates) are proportionate to the environmental impacts of their respective waste streams?
   Probe: Why / why not? Probe: Are there any examples of where the rates and waste categories do or do not match the environmental impact of such waste streams?

5. From your observations, are there any waste streams for which LDT rates are not effective in preventing waste from being sent to landfill? Which streams?

Probes: Why do you think these waste streams are landfilled rather than recycled, reused, or sent to energy recovery? How could improvements be made to better align the rates and the waste streams?

6. What impact, if any, do you think LDT rates have had on the increased uptake of alternative, more sustainable technologies (e.g. anaerobic digestion and composting)?
(If any impact) Can you provide any examples of whether and how LDT has influenced the uptake of alternative, more sustainable technologies (e.g. anaerobic digestion and composting)?

7. Currently, landfill tax rates (both standard and lower) are the same across the UK. How has this influenced waste tourism between nations?
Probes: How would waste tourism be impacted if there was a difference in landfill tax rates between Wales and other UK countries? Are you aware of any waste tourism between England and Wales? (i.e. moving waste across borders to find more affordable or more effective waste treatment options). If yes, what impact or influence, if any, have LDT rates had on waste tourism between UK countries?

8. Thinking about landfill gate fees. Are you aware of any differences in landfill gate fees between Wales and other UK countries?
Probes: Which countries are higher / lower / changed over time? How has this influenced the flows of waste between nations?

9. To what extent do you think landfill gate fee rates are linked to changes to LDT rates?
Probes: Why? Any examples?

10. The unauthorised disposals tax rate in Wales is set at 150 per cent of the standard tax rate. In England and Scotland, the unauthorised disposal rate is set at 100 per cent. In your opinion, how effective or ineffective has the unauthorised disposal rate been? *Probes: Do you think the unauthorised tax rate in Wales has been more or less effective than in England and Scotland? Why / why not?*

11. How has the design of LDT influenced waste misdescription within the waste industry as a whole?
Probes: More specifically, how has the gap between the standard and lower rates impacted on mis-description of waste at landfill? Are there any examples? If yes,

what difference between the standard and lower rate would result in no or little waste being misdescribed?

LDT legislation: We would like to draw on your experience to understand the extent to which LDT legislation (i.e. other than tax rates) has changed how waste is managed over the last five years.

12. How aware are you of the particulars around exemptions, reliefs and discounts under the Landfill Disposals Tax Act? (if aware) In your opinion, what impacts have the reliefs, discounts and exemptions under the Landfill Disposals Tax Act had on waste management in Wales?
Probes: Positive / negative? Why / why not? To what extent are the reliefs, discounts and exemptions in LDT still appropriate and necessary?

13. What differences in legislation are you aware of between the Landfill Disposals Tax Act in Wales and the other landfill tax legislations in other UK countries? (i.e. exemptions, reliefs, water discounts)
If aware… How do you think the differences in the landfill tax regulations across the UK have impacted on: i) rates of recycling; ii) levels of tax risk; iii) viability of landfill/waste businesses?
Probes: If so, has this impact been positive or negative

14. What impact to do you think LDT has had on innovation in the waste management sector in Wales?
Probe: How has this changed over time?

15. In your opinion, how has LDT contributed to Welsh Government environmental targets (e.g. 2025 and 2050 'Beyond Recycling Strategy', recycling rates and targets)?
Probes: What has been effective/not as effective? Direct impacts / indirect impacts / positive support / negative support?

Summary questions: we'd like to ask you a few final summary questions on the impact of LDT.

16. Other than what we have already discussed in this interview, do you think LDT has led to any other changes with regard to waste management in Wales?

17. Drawing on your expertise and experience, how would you like to see LDT develop in the future?

18. Is there anything else you would like to comment on regarding the impact of the Landfill Disposals Tax Act in Wales from 2018 to 2022?

Regulator / Government Body Topic Guide

Introduction

1. Please give me a brief overview of your organisation and role.
   Prompt: How does your work relate to LDT?

LDT rates: We would like to draw on your experience to understand the impact of LDT rates had on how waste is managed within the waste sector (including unauthorised disposals) over the last five years.

2. LDT standard and lower rates have historically been increased to align with projected inflation. To what extent do you think this approach has had an impact on diverting waste away from landfill?
   Prompt: Are there any examples/cases where increased recycling rates are linked to the raising of the standard and lower rates in line with inflation?

3. As you will be aware, within Wales, a standard and lower rate of tax exist. As of 2021/2022 financial year, these stood at: £98.60 standard rate; £3.15, lower rate. In your opinion, how has the difference between these two LDT rates influenced how waste is managed within the waste sector?
   Probe: How are current tax rates incentivising waste towards recovery and thus diverting from landfill?

4. From your perspective, to what extent do you think the different LDT rates (standard, lower, and unauthorised disposal rates) are proportionate to the environmental impacts of their respective waste streams?
   Probe: Why / why not? Probe: Are there any examples of where the rates and waste categories do or do not match the environmental impact of such waste streams?

5. From your observations, are there any waste streams for which LDT rates are not effective in preventing waste from being sent to landfill? Which streams?
   Probes: Why do you think these waste streams are landfilled rather than recycled, reused, or sent to energy recovery? How could improvements be made to better align the rates and the waste streams?

6. What impact, if any, do you think LDT rates have had on the increased uptake of alternative, more sustainable technologies (e.g. anaerobic digestion and composting)?
(if any impact) Can you provide any examples of whether and how LDT has influenced the uptake of alternative, more sustainable technologies (e.g. anaerobic digestion and composting)?

7. Currently, landfill tax rates (both standard and lower) are the same across the UK. How has this influenced waste tourism between nations?
Probes: How would waste tourism be impacted if there was a difference in landfill tax rates between Wales and other UK countries? Are you aware of any waste tourism between England and Wales? (i.e. moving waste across borders to find more affordable or more effective waste treatment options). If yes, what impact or influence, if any, have LDT rates had on waste tourism between UK countries?

8. The unauthorised disposals tax rate in Wales is set at 150 per cent of the standard tax rate. In England and Scotland, the unauthorised disposal rate is set at 100 per cent. In your opinion, how effective or ineffective has the unauthorised disposal rate been? *Probes: Do you think the unauthorised tax rate in Wales has been more or less effective than in England and Scotland? Why / why not?*

9. How has the design of LDT influenced waste misdescription within the waste industry as a whole?
Probes: More specifically, how has the gap between the standard and lower rates impacted on mis-description of waste at landfill? Are there any examples? If yes, what difference between the standard and lower rate would result in no or little waste being misdescribed?

LDT legislation: We would like to draw on your experience to understand the extent to which LDT legislation (i.e. other than tax rates) has changed how waste is managed over the last five years.

10. How aware are you of the particulars around exemptions, reliefs and discounts under the Landfill Disposals Tax Act? (if aware) In your opinion, what impacts have the reliefs, discounts and exemptions under the Landfill Disposals Tax Act had on waste management in Wales?
Probes: Positive / negative? Why / why not? To what extent are the reliefs, discounts and exemptions in LDT still appropriate and necessary?

11. We are interested to know of any ambiguities or gaps in the current legislation which mean that less tax than expected is being collected. Are you aware of any ambiguities or gaps in the current legislation meaning less tax than expected is being collected?
Probes: Examples? How can this be combatted?

12. What differences in legislation are you aware of between the Landfill Disposals Tax Act in Wales and the other landfill tax legislations in other UK countries? (i.e. exemptions, reliefs, water discounts)
If aware… How do you think the differences in the landfill tax regulations across the UK have impacted on: i) rates of recycling; ii) levels of tax risk; iii) viability of landfill/waste businesses?
Probes: If so, has this impact been positive or negative

13. In your opinion, how has LDT contributed to Welsh Government environmental targets (e.g. 2025 and 2050 'Beyond Recycling Strategy', recycling rates and targets)?
Probes: What has been effective/not as effective? Direct impacts / indirect impacts / positive support / negative support?

Summary questions: we'd like to ask you a few final summary questions on the impact of LDT.

14. (Scottish/English Gov) Are there any lessons learned and good practices examples from other UK countries in terms of landfill tax?

15. In your opinion, what have been the positive impacts of LDT legislation? Probes: encouraging compliance, rates of recycling, misdescription, circular economy, contribution to Welsh Government priorities. Unintended positive impacts.

16. In your opinion, what have been the negative impacts of LDT legislation? Probes: business viability, rates of recycling, misdescription, waste tourism, conflict with Welsh Government priorities. Unintended negative impacts.

17. Drawing on your expertise and experience, how would you like to see LDT develop in the future?

18. Is there anything else you would like to comment on regarding the impact of the Landfill Disposals Tax Act in Wales from 2018 to 2022?

Producer Topic Guide

Introduction

1. Please give me a brief overview of your organisation and role.
   Prompt: How does your work relate to LDT? What types of waste do you produce/manage?

LDT rates: We would like to draw on your experience to understand the impact of LDT rates had on how waste is managed within the waste sector (including unauthorised disposals) over the last five years.

2. As you will be aware, within Wales, a standard and lower rate of tax exist. As of 2021/2022 financial year, these stood at:£98.60 standard rate; £3.15, lower rate. In your opinion, how has the difference between these two LDT rates influenced how you manage your waste?

3. From your observations, are there any waste streams for which LDT rates are not effective in preventing waste from being sent to landfill? Which streams?
   Probes: Why do you think these waste streams are landfilled rather than recycled, reused, or sent to energy recovery? How could improvements be made to better align the rates and the waste streams?

4. The unauthorised disposals tax rate in Wales is set at 150 per cent of the standard tax rate. In England and Scotland, the unauthorised disposal rate is set at 100 per cent. In your opinion, how effective or ineffective has the unauthorised disposal rate been? *Probes: Do you think the unauthorised tax rate in Wales has been more or less effective than in England and Scotland? Why / why not?*

LDT legislation: We would like to draw on your experience to understand the extent to which LDT legislation (i.e. other than tax rates) has changed how waste is managed over the last five years.

5. How aware are you of the particulars around exemptions, reliefs and discounts under the Landfill Disposals Tax Act? (if aware) In your opinion, what impacts have the reliefs, discounts and exemptions under the Landfill Disposals Tax Act had on your business and the wider sector?
   Probes: Positive / negative? Why / why not? To what extent are the reliefs, discounts and exemptions in LDT still appropriate and necessary?

6. What impact to do you think LDT has had on innovation within your business?
   Probe: How has this changed over time?

7. Since the landfill disposals tax replaced the landfill tax regulations in 2018, has the influence on innovation differed or stayed the same in: i) Your company?; ii) Your sector?
   Probes: How so? Positive or negative changes?

8. Companies often consider a range or list of financial drivers when determining how to manage their waste. From the range of your company's financial drivers, where does LDT fall within this list?

Summary questions: we'd like to ask you a few final summary questions on the impact of LDT.

9. In your opinion, what have been the positive impacts of LDT legislation? Probes: encouraging compliance, rates of recycling, misdescription, circular economy, contribution to Welsh Government priorities. Unintended positive impacts.

10. In your opinion, what have been the negative impacts of LDT legislation? Probes: business viability, rates of recycling, misdescription, waste tourism, conflict with Welsh Government priorities. Unintended negative impacts.

11. Drawing on your expertise and experience, how would you like to see LDT develop in the future?

12. Is there anything else you would like to comment on regarding the impact of the Landfill Disposals Tax Act in Wales from 2018 to 2022?

Other Infrastructure Operators and Commercial Collectors Topic Guide

Introduction

1. Please give me a brief overview of your organisation and role.
   Prompt: How does your work relate to LDT? What services does your organisation provide and what waste treatment facilities do you have?

LDT rates: We would like to draw on your experience to understand the impact of LDT rates had on how waste is managed within the waste sector (including unauthorised disposals) over the last five years.

2. LDT standard and lower rates have historically been increased to align with projected inflation. To what extent has this had an impact on waste being sent to your facilities for treatment?
Prompt: Are there any examples/cases where increased recycling rates are linked to the raising of the standard and lower rates in line with inflation?

3. As you will be aware, within Wales, a standard and lower rate of tax exist. As of 2021/2022 financial year, these stood at: £98.60 standard rate; £3.15, lower rate. In your opinion, how has the difference between these two LDT rates influenced how waste is managed within the waste sector?
Probe: How are current tax rates incentivising waste towards recovery and thus diverting from landfill?

4. From your observations, are there any waste streams for which LDT rates are not effective in preventing waste from being sent to landfill? Which streams?
Probes: Why do you think these waste streams are landfilled rather than recycled, reused, or sent to energy recovery? How could improvements be made to better align the rates and the waste streams?

5. What impact, if any, do you think LDT rates have had on the increased uptake of alternative, more sustainable technologies (e.g. anaerobic digestion and composting)?
(If any impact) Can you provide any examples of whether and how LDT has influenced the uptake of alternative, more sustainable technologies (e.g. anaerobic digestion and composting)?

6. (Collectors) Thinking about landfill gate fees. Are you aware of any differences in landfill gate fees between Wales and other UK countries?
Probes: Which countries are higher / lower / changed over time? How has this influenced the flows of waste between nations?

7. To what extent do you think landfill gate fee rates are linked to changes to LDT rates?
Probes: Why? Any examples?

LDT legislation: We would like to draw on your experience to understand the extent to which LDT legislation (i.e. other than tax rates) has changed how waste is managed over the last five years.

8. From your observations, how has the Welsh waste sector changed as a result of the Landfill Disposals Tax Act?

9. Compared to the landfill tax regulations of 1996, what impact to do you think LDT has had on innovation within: i) your company; and ii) the waste management sector in Wales?
Probe: How has this changed over time?

10. To what extent, if any, is LDT a financial consideration or driver of your business?
Probe: Why/why not?

11. What impact, if any, has the design of LDT and tax rates had your business?

Summary questions: we'd like to ask you a few final summary questions on the impact of LDT.

12. In your opinion, what have been the positive impacts of LDT legislation? Probes: encouraging compliance, rates of recycling, misdescription, circular economy, contribution to Welsh Government priorities. Unintended positive impacts.

13. In your opinion, what have been the negative impacts of LDT legislation? Probes: business viability, rates of recycling, misdescription, waste tourism, conflict with Welsh Government priorities. Unintended negative impacts.

14. Drawing on your expertise and experience, how would you like to see LDT develop in the future?

15. Is there anything else you would like to comment on regarding the impact of the Landfill Disposals Tax Act in Wales from 2018 to 2022?

Landfill Site Operator Topic Guide

Introduction

1. Please give me a brief overview of your organisation and role.
Prompt: How does your work relate to LDT? What services does your organisation provide and what waste treatment facilities do you have? What types of waste do you produce/manage?

LDT rates: We would like to draw on your experience to understand the impact of LDT rates had on how waste is managed within the waste sector (including unauthorised disposals) over the last five years.

2. LDT standard and lower rates have historically been increased to align with projected inflation. To what extent has this had an impact on waste being sent to your facilities for treatment?
Prompt: Are there any examples/cases where increased recycling rates are linked to the raising of the standard and lower rates in line with inflation?

3. As you will be aware, within Wales, a standard and lower rate of tax exist. As of 2021/2022 financial year, these stood at: £98.60 standard rate; £3.15, lower rate. In your opinion, how has the difference between these two LDT rates influenced how waste is managed within the waste sector?
Probe: are the rates high enough to provide an incentive to drive recovery and corresponding diversion from landfill?

4. From your observations, are there any waste streams for which LDT rates are not effective in preventing waste from being sent to landfill? Which streams?
Probes: Why do you think these waste streams are landfilled rather than recycled, reused, or sent to energy recovery? How could improvements be made to better align the rates and the waste streams?

5. Currently, landfill tax rates (both standard and lower) are the same across the UK. How has this influenced waste tourism between nations?
Probes: How would waste tourism be impacted if there was a difference in landfill tax rates between Wales and other UK countries? Are you aware of any waste tourism between England and Wales? (i.e. moving waste across borders to find more affordable or more effective waste treatment options). If yes, what impact or influence, if any, have LDT rates had on waste tourism between UK countries?

6. Thinking about landfill gate fees. Are you aware of any differences in landfill gate fees between Wales and other UK countries?
Probes: Which countries are higher / lower / changed over time? How has this influenced the flows of waste between nations?

7. To what extent are your landfill gate fee rates are linked to changes to LDT rates?
Probes: Why? Any examples? Has LDT had an impact/influence on your gate fees? Other than landfill tax, are you aware of any other factors that affect gate fees?

8. How has the design of LDT influenced waste misdescription within the waste industry as a whole?
Probes: More specifically, how has the gap between the standard and lower rates impacted on mis-description of waste at landfill? Are there any examples? If yes, what difference between the standard and lower rate would result in no or little waste being misdescribed?

LDT legislation: We would like to draw on your experience to understand the extent to which LDT legislation (i.e. other than tax rates) has changed how waste is managed over the last five years.

9. How aware are you of the particulars around exemptions, reliefs and discounts under the Landfill Disposals Tax Act? (if aware) In your opinion, what impacts have the reliefs, discounts and exemptions under the Landfill Disposals Tax Act had on: i) your business; and ii) waste management in Wales?
Probes: Positive / negative? Why / why not? To what extent are the reliefs, discounts and exemptions in LDT still appropriate and necessary?

10. What differences in legislation are you aware of between the Landfill Disposals Tax Act in Wales and the other landfill tax legislations in other UK countries? (i.e. exemptions, reliefs, water discounts)
If aware… How do you think the differences in the landfill tax regulations across the UK have impacted on: i) rates of recycling; ii) levels of tax risk; iii) viability of landfill/waste businesses?
Probes: If so, has this impact been positive or negative

11. Compared to the landfill tax regulations of 1996, what impact to do you think LDT has had on innovation within: i) your company; and ii) the waste management sector in Wales?
Probe: How has this changed over time?

16. To what extent, if any, is LDT a financial consideration or driver of your business?
Probe: Why/why not?

17. What impact, if any, has the design of LDT and tax rates had your business?

Summary questions: we'd like to ask you a few final summary questions on the impact of LDT.

12. In your opinion, what have been the positive impacts of LDT legislation? Probes: encouraging compliance, rates of recycling, misdescription, circular economy, contribution to Welsh Government priorities. Unintended positive impacts.

13. In your opinion, what have been the negative impacts of LDT legislation? Probes: business viability, rates of recycling, misdescription, waste tourism, conflict with Welsh Government priorities. Unintended negative impacts.

14. Drawing on your expertise and experience, how would you like to see LDT develop in the future?

15. Is there anything else you would like to comment on regarding the impact of the Landfill Disposals Tax Act in Wales from 2018 to 2022?

Appendix C: Sampling strategy

Stakeholder	Research Approach	Population	Target Sample	Sampling Approach & Criteria	Source of Contacts	Possible Issues
Landfill Site Operators	**Interviews** Due to sensitivities of some questions, they may not be willing to share information with other landfill site operators so this has been changed from workshops.	18	Eight - ten (One - two closed landfill sites, to check list with NRW)	**Purposive Sampling** Criteria: Those mainly treating their own waste (e.g. Tata, RWE, Newport) versus those that treat waste from a wider range of sources (e.g. LAs[74]) By type of waste landfilled (Each site submits quarterly returns to NRW split by waste managed, which shows EWC codes) Existing and closed landfill sites[75] (to ask NRW for list of closed landfills) Location within Wales Larger landfill sites (including the five that comprise 80 per cent of landfilled waste)	NRW, WESA, CIWM Or Eunomia to find contact details online	Need to make sure we are speaking to the right people; to initially request from NRW if they can share contact details with us, which will likely be landfill managers; we must then work towards interviewing we may end up speaking to the commercial lead who has a strategic oversight of landfill

[74] It is important to recognise that LAs may appear as both landfill site operators and waste producers. Where this may take place, we will adapt our interview approach to that particular stakeholder as needed.
[75] These will relate to landfill sites that closed during the evaluation period.

Stakeholder	Research Approach	Population	Target Sample	Sampling Approach & Criteria	Source of Contacts	Possible Issues
				We will map the landfill site operators against the different criteria to determine the split.		
Waste producers E.g. local authorities, construction companies	**Interviews** May have some similar sensitivities to landfill site operators	-	10	**Purposive Sampling** Criteria organisations that produce larger tonnages by sources of waste sent to landfill(e.g. C&D, etc) Type of waste producer (e.g. construction companies, local authorities) Speak to some LAs that have recently signed contracts with incinerators (why did they move to incinerators from landfill, for example; can look at WasteDataFlow to see where LA waste goes)	Eunomia	Limited participation due to time/work pressure
Environmental organisations and trade associations (new addition)	**Interviews**	-	Four (two/two split)	**Purposive Sampling** Criteria: Wales-focussed or UK-based with knowledge of Wales	Eunomia and Welsh Government For trade associations, we are already in touch with UROC, CIWM, WESA, and WLGA for	Need to ensure we identify the right representatives who can respond to the questions accordingly

Stakeholder	Research Approach	Population	Target Sample	Sampling Approach & Criteria	Source of Contacts	Possible Issues
				Specific criteria: – **Environmental organisations:** Waste- or circular economy-related NGOs (**Keep Wales Tidy as priority**, WRAP to be considered), or those with knowledge of landfill (Friends of the Earth as priority) – **Trade associations**: waste- or circular economy-related TAs (e.g. UROC, CIWM, WESA, WLGA, and The Recycling Association) Technical knowledge with LDT vs knowledge on wider Welsh policy	general stakeholder engagement support	
Regulator / government bodies	**Interviews**	Four	Four	**Purposive Sampling** To include: England: Defra and HM Treasury (joint interview[76])	Welsh Government	Welsh, UK, and Scottish Government Departments

[76] We have proposed joint interviews for certain stakeholder groups for efficiency and to ensure we capture a broad range of perspectives. However, this approach will need to be carefully managed to ensure the interviews remain workable. This will include checking beforehand that participants are happy to be interviewed with someone from another organisation and restricting the number of interviewees (e.g. one per organisation) to ensure manageable numbers.

Stakeholder	Research Approach	Population	Target Sample	Sampling Approach & Criteria	Source of Contacts	Possible Issues
				Scotland: SEPA and Revenue Scotland (joint interview) Wales: NRW and WRA (separate interviews) Wales: Welsh Government (e.g. Andy Rees) Criteria for representatives: Waste/environment-specific departments of each government Expert knowledge on equivalent LDT Act per nation Familiar with impact of LDT and other policy tools on the sector We have excluded the NIEA because Northern Ireland doesn't share a border with England and there is less likely to be waste tourism with having to transfer waste by sea; Scotland is also a better comparison with England because they have the same powers to set their own LDT.		

Stakeholder	Research Approach	Population	Target Sample	Sampling Approach & Criteria	Source of Contacts	Possible Issues
				England's LDT covers Northern Ireland as well.		
Waste treatment infrastructure providers (e.g. EfW and other treatment providers[77])	Interviews VS Workshops	-	TBC	**Purposive Sampling** Criteria: Business operating in Wales Bigger weight on waste treatment providers versus collection and skip companies On main person/people being interviewed: must have been with the company or worked in the industry for at least five years	NRW, WESA, CIWM	Some degree of self-selection inevitable. This can be mitigated through broad outreach and accessibility of participation methods
Large collection companies		-			WESA, CIWM	
Skip companies ***They are likely to be those sending the most waste to landfill and they have the potential to commit the most fraud.***		-			UROC	Small companies may not be in contact with trade associations

[77] We have recommended to include a range of treatment providers to understand how their choice to invest and operate their specific treatment option was shaped by any factors around landfill and LDT.

Appendix D: Research and sub-research questions

Question Type	Research Question	Sub-Research Question
Impact	A1 To what extent has the approach taken to date to raise the standard and lower rate in line with inflation been effective in encouraging an increase in recycling and reuse?	
	A2 What is the impact of the gap between the lower and standard rate in relation to behaviour?	A2.1 Has the gap between standard and lower rates incentivised mis-description of waste?
		A2.2 If so, what level of change to the rates could the sector tolerate if the gap was closed?
	A3 How aligned are the different rates and waste categories in LDT legislation with the overall environmental impacts of such waste streams?	
	A4 Are there certain waste streams for which the rates do not appear to be having a deterrent effect?	A4.1 Why might this (not having a deterrent effect) be the case?
		A4.2 How could improvements be made to aligning the rates and the waste streams?
	A5 Has there been any correlation between an increase in LDT rates and an increase in the uptake of alternative more sustainable technologies (e.g. anaerobic digestion and composting)?	
	A6 Consider the role of LDT in the drivers of the flow of waste between England (and other UK countries) and Wales and any issues regarding incentivising behaviour and waste tourism.	
	A7 Explore the interaction between gate fees and LDT rates	A7.1 Have the gate fees decreased as LDT has increased?

Question Type	Research Question	Sub-Research Question
		A7.2 What differences are there in gate fees between Wales and the rest of the UK?
		A7.3 If there are differences in gate fees, have the differences in gate fees between Wales and the rest of the UK influenced the flow of waste between Wales and the rest of the UK?
	A8 Is there any evidence that having the unauthorised disposals rate has had a deterrent effect?	A8.1 Is there any evidence from across the UK that bringing unauthorised disposals under the scope of landfill disposals tax has had a perceived impact on deterring waste crime?
		A8.2 Is there any evidence that the higher rate in Wales is having a greater impact than in England and Scotland where the standard rate for unauthorised disposals is applied?
Behaviour	B1 Is there any evidence that the differences in LDT legislation compared within the UK have had an impact, and if so, has this impact been positive or negative on: rates of recycling; levels of tax risk; viability of landfill/waste businesses?	
	B2 What has changed in Wales as a result of the Landfill Disposals Tax Act?	B2.1. Identify areas where the legislation is working well, had a positive impact (and positive unintended consequences) and is for example, encouraging compliance.

Question Type	Research Question	Sub-Research Question
		B2.2. Identify areas where the legislation is not working well, had a negative impact and encouraging undesired impacts or unintended consequences.
	B3 How has the legislation influenced industry behaviour and innovation?	B3.1 What have been the main changes in the industry in terms of behaviour and innovation as a result of LDT since its introduction in 2018?
		B3.2 Has the influence on behaviours and innovation differed since the landfill disposals tax replaced landfill tax?
		B3.3 Has the tax been a financial driver to businesses?
		B3.4 What impacts have the reliefs, discounts and exemptions under LDTA had on taxpayer behaviour?
		B3.5 Are the reliefs, discounts and exemptions in LDTA still appropriate and necessary?
	B4 Has the design of LDT changed behaviours with regard to mis-description of waste for tax purposes?	
	B5 Are there any ambiguities or gaps in the current legislation meaning less tax than expected is being collected?	

Question Type	Research Question	Sub-Research Question
	B6 What impact has LDT had on progress towards meeting existing environmental targets e.g. 2025 and 2050 'Beyond Recycling Strategy' including what has been effective and not as effective.	
Broader Questions	C1 Are there lessons learned from other UK countries which could inform ways to further behaviour change in relation to landfill taxes?	
	C2 How aligned is LDT with wider environmental policy?	
	C3 What impact has the design of LDT and tax rates had on industry decisions over the viability of landfill sites in Wales?	
	C4 What impact has the Landfill Disposals Tax had on waste sector behaviour and on wider environmental outcomes based on the independent review of the Landfill Disposals Tax Communities Scheme (LDTCS)?	
	C5 The review will also need to take into account the findings of the separate review of landfill tax in England and Northern Ireland being undertaken by the UK Government.	