Explanatory Memorandum to The Digital Waste Tracking (Wales) Regulations 2026

This Explanatory Memorandum has been prepared by the Local Government, Housing, Climate Change and Rural Affairs Group and is laid before Senedd Cymru in conjunction with the above subordinate legislation and in accordance with Standing Order 27.1.

Cabinet Secretary's Declaration

In my view, this Explanatory Memorandum gives a fair and reasonable view of the expected impact of The Digital Waste Tracking (Wales) Regulations 2026. I am satisfied that the benefits justify the likely costs.

Huw Irranca-Davies MS
Deputy First Minister and Cabinet Secretary for Climate Change and Rural Affairs
3 March 2026

PART 1

1. Description

1.1 The Digital Waste Tracking (Wales) Regulations 2026 (the Regulations) establish an electronic (digital) system for tracking movements of controlled waste. The Regulations place mandatory requirements on operators of permitted sites where controlled waste is received for management to record information about that waste and ensure that information is entered into the digital system using approved software. The Regulations exclude commercial waste received at Household Waste Recycling Centres (HWRCs) as they will be included in new regulations during the next phase.

1.2 The waste industry includes a large number and complex array of operators in the UK. In Wales there are approximately 748 waste site operators, 10,772 waste exemptions and 16,932 (7,675 upper tier) registered waste carriers, brokers and dealers. To ensure the effective introduction of the digital system, all four governments across the UK are planning to implement mandatory requirements in phases.

1.3 This instrument, which applies in Wales, introduces requirements on permitted operators (i.e. those who hold a permit) of waste receiving sites except commercial waste received at HWRCs. A second phase will see the making of a further instrument that will impose mandatory requirements on other waste industry operators once the digital system is sufficiently developed, including commercial waste received at HWRCs. This second phase will see the digital tracking of waste movements from sites where the waste is produced through to waste receiving sites, including while the waste is in transport.

1.4 The measures in these Regulations are aimed at reducing waste crime and supporting the Welsh Government's ambitions for a circular economy.

2. Matters of special interest to the Legislation, Justice and Constitution Committee

2.1 None.

3. Legislative background

3.1 These Regulations are laid before Senedd Cymru in accordance with the Senedd approval procedure under section 160A(5)(b) of the Environmental Protection Act 1990.

3.2 These are the first Regulations to be made under sections 34CA and 34CB of the Environmental Protection Act 1990 ("the 1990 Act"), which are new powers inserted into the 1990 Act by section 58 of the Environment Act 2021. These powers enable the Welsh Ministers to make provision for an electronic (digital) waste tracking system and related requirements.

3.3 The Regulations establish a new statutory framework for tracking controlled waste (defined in section 75 of the 1990 Act as household, industrial or commercial waste) in Wales through a Digital Waste Tracking System (DWTS).

3.4 Section 34CA (7) of the 1990 Act specifically provides a power to designate a person to establish, operate or maintain the system and confer functions on that person. Regulation 3 designates the Welsh Ministers as "the designated person" for those purposes and gives them key functions central to the operation of the DWTS, including:

- establishing, maintaining and operating the DWTS; and
- approving software.

3.5 The Regulations require operators of sites where controlled waste is received under a permit granted under the Environmental Permitting (England and Wales) Regulations 2016 (defined in regulation 2 as an operator of a permitted facility) to enter specified information about that waste into the DWTS within prescribed deadlines.

3.6 The Regulations exempt digitally excluded persons (defined in section 34CA (12) of the 1990 Act) from the digital requirements in the Regulations in accordance with section 34CA (6) of the 1990 Act. Alternative requirements are instead imposed on such persons to make, keep and provide written records of specified information.

3.7 The Regulations make provision for outages, the correction of errors, the payment of a DWTS fee and place duties on the regulator, Natural Resources Wales (NRW), to monitor compliance and maintain a public register.

3.8 Provision is also made to address cost recovery, penalties, appeals, and access to and the sharing of information.

3.9 The Regulations do not affect current requirements on operators of a permitted facility (whether or not a digitally excluded person) to complete and keep written descriptions of waste that are currently required by section 34 of the 1990 Act to accompany the transfer of controlled waste (a waste transfer note under regulation 35 of the Waste (England and Wales) Regulation 2011) and the transfer of hazardous waste (a

consignment note under the Hazardous Waste (Wales) Regulations 2005).

4. Purpose and intended effect of the legislation

4.1 Over 200 million tonnes of waste is produced in the UK[1] of which around 8 million tonnes is produced in Wales[2] each year. Currently, there is no single or comprehensive way of tracking it - with legislation relating to the transport, management and description of waste being introduced separately over the last 30 or so years.

4.2 There are different processes for different types of waste movements and large amounts of data recorded through these processes are either not collected or not collated centrally. As a result, it is very difficult at a national level to determine where waste is being generated and what happens to it, and at a local level it is difficult for waste producers to check that their waste has been handled appropriately.

4.3 Permitted waste site operators in Wales must submit quarterly waste returns to NRW to report the types and quantities of waste handled, ensuring compliance with environmental permits. Returns are required within one month of the quarter's end using either an electronic template or paper returns.

4.4 The position in Wales is more established and consistent in respect of local authority (LA) activities. WasteDataFlow (WDF) is used by all four nations which is a web-based system for LAs to report municipal waste data. In Wales, there is a statutory requirement for LAs to use WDF. Regulation 5 of The Recycling, Preparation for Re-use and Composting Targets (Monitoring and Penalties) (Wales) Regulations 2011 obliges LAs to use WDF as the means of reporting waste flows in a way that enables LA recycling rates to be calculated in order to determine whether or not statutory target are being met. Failure to do meet statutory targets can incur a penalty. The accuracy of this calculation depends upon accurate reporting of reject rates.

4.5 Estimated data concerning industrial and commercial (I&C) waste, and construction and demolition (C&D) waste, are acquired through periodic surveys of businesses in Wales. These surveys are expensive. Other data can be collected from the waste Duty of Care (DoC)[3] which requires a written description of waste to be agreed and signed when it

[1] https://www.gov.uk/government/statistics/uk-waste-data.
[2] Sources: https://www.gov.wales/sites/default/files/statistics-and-research/2023-12/local-authority-municipal-waste-management-2022-to-2023.pdf; https://naturalresources.wales/media/693534/survey-of-commerical-and-industrial-waste-generated-in-wales-2018.pdf; and https://naturalresources.wales/media/694993/cd-2019-survey-web-accessible-final-003.pdf
[3] Natural Resources Wales / Waste duty of care

is transferred to another person. This information must be kept by a waste operator for a minimum of 2 years and shared with the regulator on request. A similar but more comprehensive requirement exists for hazardous waste movements.

4.6 DWTS is an essential tool to bring together the separate ways of collecting data which will provide more timely information with regards to what is happening to waste. In addition, it will make it much harder for rogue operators to compete in the industry and commit waste crime including fly-tipping, deliberate misclassification of waste, illegal exports and the operation of illegal waste sites.

4.7 DWTS is also an essential tool for monitoring progress with our Beyond Recycling Strategy and other legislation we have in place in Wales (e.g. the Workplace Recycling Regulations [4]).

4.8 DWTS is expected to eventually replace many of the functions currently provided by WasteDataFlow. However, further work is needed to fully understand the data requirements for LAs and ensure that the new system captures all necessary information. This will help ensure a smooth transition and continued data accuracy.

4.9 The lack of transparency within the current processes for recording information about waste movements provides opportunities for waste criminals to operate, undercutting legitimate waste businesses and causing harm to the environment and human health. Waste crime costs the Welsh economy an estimated £15.2-32.4 million annually (in 2016 prices) [5]. Criminal activities include fly tipping, deliberate misclassification of waste, illegal waste exports and operation of illegal waste sites. The introduction of a digital system for recording information about waste movements will give NRW much needed oversight for compliance monitoring and make it much harder for rogue operators to compete in the industry. This will ensure greater protection of the environment by reducing illegal dumping, safeguard public health by ensuring that waste is properly managed and promote economic fairness by supporting compliant businesses.

4.10 NRW's Third State of Natural Resources Report for Wales 2025 stressed that a mandatory waste data tracking system is needed to address existing evidence gaps by transforming outdated systems for recording waste movements. A key aim of digitising waste records is to increase transparency of reporting, making it more difficult for rogue waste companies to compete in the waste industry and commit waste crime[6].

[4] The Waste Separation Requirements (Wales) Regulations 2023
[5] NRW's Second State of Natural Resources Report for Wales 2020 (Sonarr)
[6] https://cdn.cyfoethnaturiol.cymru/f45ehjei/sonarr2025-final-report.pdf

4.11 Although waste is a devolved policy matter, all four governments across the UK have committed to the introduction of mandatory requirements to digitally track waste. Similar instruments to these Regulations will be made for England by the UK Government's Department for Environment and Rural Affairs (Defra), for Scotland by the Scottish Government and for Northern Ireland by the Department of Agriculture, Environment and Rural Affairs which will provide cohesive digital waste tracking requirements across the UK.

4.12 These Regulations designate the Welsh Ministers to establish, maintain and operate the digital system.

4.13 These Regulations require operators of waste receiving sites to record information about the waste they receive and to enter that information into the digital system using software approved by the Welsh Ministers. The Regulations make provision for waste operators who are digitally excluded[7] - that is, a person whose religious or other beliefs are incompatible with using electronic equipment or for whom it is not reasonably practicable to use electronic communications or to keep electronic records for any reason (including age, disability or location). Such persons are exempt from the digital requirements. Instead, a digitally excluded operator must comply with the alternative requirements set out in the Regulations which include applying to NRW for a 'digitally excluded number', making and keeping written records about waste they receive and making these records available to NRW on request. Whilst the majority of waste operators are businesses with a legal personality, we consider that only waste operators who are natural persons (such as a sole trader) would be a digitally excluded person for the purposes of the Regulations as only a natural person could, for example, hold beliefs that are incompatible with using electronic equipment.

4.14 Waste operators who are required to use the digital system must pay an annual service charge fee of £26[8]. This fee will be used to recoup the costs of establishing, operating and maintaining the system. As digitally excluded operators are not using the digital system, they are not required to pay the fee.

4.15 These Regulations make provision for new criminal offences and civil sanctions. The Regulations make it a criminal offence to fail to comply with any of the requirements (digital and alternative) in the Regulations apart from the requirement to pay the annual fee. Instead, a waste operator who fails to pay the fee will not be able to enter required information about waste they receive into the digital system which is a

[7] See Section 34CA of the Environmental Protection Act 1990 for definition of "digitally excluded person"

[8] The service charge will be reviewed after 12 months of mandatory use of the service. We will use data from the service to calculate what the accurate service charge should be for cost recovery and will change the amount through an amending SI.

criminal offence as well as a contravention for which a civil sanction can be imposed. Criminal sanctions are regarded as necessary to enable NRW to effectively punish repeat offenders, tackle more serious offending and to ensure that the new system is not undermined by unscrupulous operators.

Problem being addressed

4.16 Currently, permitted waste operators must provide a written description of the waste which must accompany the waste when being transferred. The written description must include information about the waste and the different parties involved in the waste movement. Copies of these written descriptions are shared and signed when the waste is passed between different operators in the chain, including operators of waste receiving sites which are currently required to keep copies of these documents and submit a summary of the information recorded in them on a quarterly basis to NRW.

4.17 Permitted operators of waste receiving sites will be required to keep and submit the written descriptions of the waste as well as make a digital record of specified information about that waste. The information in the digital waste record must be entered into the digital system within 2 working days beginning with the day after the day the waste is received by the operator. This provides more detail than in the current quarterly aggregated summary site returns sent to NRW, and is provided in 'real-time' rather than by a month after the end of each quarter.

5. Consultation

5.1 The UK and Devolved Governments held a public consultation between 21 January and 15 April 2022[9].

5.2 The consultation stated that the service would be developed for both English and Welsh speakers.

5.3 The consultation was aimed at those who would be required to enter information or draw information from the service - including businesses across all sectors, government, regulators, academia and the general public.

5.4 In total, 713 responses to the consultation were received. For the purposes of the summary of responses, only those responses that directly addressed the consultation questions were summarised.

[9] Introduction of mandatory digital waste tracking | GOV.WALES

Therefore, the summary was based on 702 responses.

5.5 The summary of responses showed some respondents operating in multiple nations. This explains the total number of respondents being more than 702 in the extracted Table 2 below:

Table 2 - Number of respondents operating in each Nation

Nation of the UK	Number of respondents	Percentage of respondents
England	588	85%
Northern Ireland	98	14%
Scotland	182	26%
Wales	164	23%
No response	7	1%

5.6 There was broad support for the proposals with 79% of respondents agreeing to the waste types proposed to be tracked and 73% agreeing to the waste activities required to be subject to the tracking obligations.

5.7 All responses were considered in the development of the revised proposals set out in the joint response: Introduction of mandatory digital waste tracking | GOV.WALES

5.8 As previously described, this instrument is implementing the first phase of the introduction of mandatory digital waste tracking only. Consultation continues with stakeholders via user research and established industry working groups as the development of the digital service continues and this will inform future statutory instruments as requirements are expanded to other industry operators.

5.9 Guidance for operators who are affected by this instrument will be published and will be kept under review and updated when necessary.

PART 2 – REGULATORY IMPACT ASSESSMENT

Introduction

1. The Digital Waste Tracking System (DWTS) is being delivered on a phased basis across the UK. These Regulations represent phase one of that approach which will achieve the recording of information in respect of waste received at waste receiving sites, except commercial waste received at Household Waste Recycling Centres (HWRCs) in Wales. This is option 2 in the assessment provided below.

2. It is the current Welsh Government's intention that HWRCs will be included in an additional SI for the Senedd's scrutiny and approval in 2027 to deliver the second phase. Building on phase 1 delivery, this is expected to see digital tracking of waste movements from sites where waste is produced through to waste receiving sites - including while the waste is in transit. The position which would be reached following delivery of this second phase is described as option 3 in the assessment below and is included so that the impacts of this SI are considered within the context of the overall system which it provides a stepping stone towards the delivery of.

Overall approach and position

3. Three regulatory policy options have been considered within the RIA. This followed on from a longlist of options considered. Non-regulatory alternatives were considered - for example, voluntary initiatives. However, previously available voluntary digital systems for recording waste movement information had low numbers of users[10]. Therefore, whilst non-regulatory alternatives were considered, they have not been analysed within the options considered.

4. The three options considered are:

   Option 1 (baseline) – The baseline represents a 'do minimum option'. This option will not facilitate the commitments to mandate the digital recording of all waste movements. However, due to government legislative commitments, waste operators will be mandated to digitally record and submit data on movements of hazardous waste and persistent organic pollutants (POPs) waste. Under the baseline, the four nations would therefore need to develop their own, new IT service to enable this;

   Option 2 (delivered by these Regulations)– Implement a DWTS that requires all **permitted receiving sites (e.g. landfills, treatment and**

[10] Electronic Duty of Care (EDOC) was a non-mandatory free online portal designed to give businesses in the UK a voluntary digital alternative to the paper-based Waste Transfer Note for commercial waste transfers. EDOC was discontinued in 2021 and had just over 11,000 users.

recycling facilities) to submit data electronically on all waste received at their sites in near real time. Under this option, data is captured **only at the point of receipt**; and

Option 3 (preferred long-term option) – **Mandate end-to-end digital recording of all waste movements** to require waste producers, carriers, brokers, dealers and receiving sites to record and submit data into a central waste tracking service. This option captures information **across the full waste chain**, from the point waste is produced through to its final treatment or disposal. This option is the preferred long-term option as the analysis indicates that it delivers full end-to-end visibility of all waste movements across the entire chain, enabling comprehensive data, stronger enforcement, and significantly greater reductions in waste crime and inefficiencies than the partial coverage offered by Option 2. Consequently, it delivers better value to the taxpayer and meets policy objectives.

5. **Option 3 is the preferred long-term option** because it provides the best value for money for the taxpayer while achieving the policy aims and intended effects. Options 1 and 2 are not preferred in the long-term because the current detrimental impacts incurred by the natural environment, local communities and legitimate businesses would not be sufficiently addressed. However, Option 3 cannot be legislated for now because the waste industry involves a large number and complex array of operators. These work across the UK in a wide variety of sectors with varying levels of digital capability. To build a stable, effective and user-friendly service we need to build it incrementally. This starts with the creation of a firm foundation which delivers some of the intended benefits. Additional aspects can be added as we learn from testing the core elements of the service. This will allow us to refine and adjust our approach as we move towards a more complete end-to-end DWTS. Following assessment of the options and international best practice, the first phase will focus on waste receiving sites inputting data about waste they receive, which is option 2.

6. Without the ability to effectively and efficiently track all waste and communicate timely and relevant data (as proposed under option 3) we risk the following impacts:

- Further environmental damage;
- Operational inefficiency;
- Inability to develop waste strategies and delivery plans; and;
- Fewer investment opportunities for innovation.

7. Table 3 includes for Option 3 ongoing running/maintenance costs (CDEL (Capital) (£0.49m undiscounted and £0.48m discounted) and RDEL (Resource) (£1.13m (undiscounted) and £0.99m (discounted)) for Wales. Costs and income to be retained by Defra and no recharging to the Welsh Government will be required on the basis that the administrative

burden would be disproportionate to the immaterial figure involved.

Description of Policy Options

8. In the initial stages of the DWTS project, non-regulatory options for tracking waste were considered – for example, running communication campaigns and running free training to promote the use of digitally recorded waste movements/transfers in IT systems. However, non-regulatory options have not been presented in the formal options appraisal as we do not believe that they can meet the policy objectives. It is expected that voluntary digital tracking will have low uptake and the majority of companies will continue to track in their current ways (non digital). In the case of a well received communications campaign and high take up of training, it is not guaranteed that everyone will submit their data through existing channels. Additionally, it will not provide any standardisation or full digitalisation so can give rise to additional costs to standardise data for use, which can increase the error rate of the data, and fail to meet policy objectives.

9. For example, communication campaigns have been disregarded as a suitable option given the widespread non-compliance, and with the cost to some businesses of transitioning to digital recording of data, communication campaigns alone are unlikely to have the desired impact of bringing all businesses into digitally recording their waste movements/transfers. Effective non-regulatory options would rely on all businesses voluntarily recording their data in a digital format. There are already a number of voluntary IT systems that can be used to record waste data, however, there has been insufficient uptake of these systems. Even if a significant number of businesses voluntarily complied with digital recording (and unique ID codes) but a relatively small number of operators did not voluntarily comply, then the whole system would be undermined and the potential benefits to businesses, government and regulators would quickly be diminished. This is because non-compliance from a small number of operators would create ‘breaks’ in data which would hinder the utility of the dataset. In addition, non-compliance is more likely to be carried out by illegal operators that are motivated by the perceived private benefits of illegal activity (avoiding legitimate disposal and treatment costs, e.g. landfill tax) and without these operators reporting data, voluntary initiatives will not be able to deliver one of the key objectives of tracking waste - reducing crime.

10. This highlights the underlying coordination failure in the sector, where voluntary participation depends on collective effort, but individual actors have limited incentive to comply unless others do the same. In the absence of mandatory requirements, legitimate operators bear the costs of participation while illegal or disengaged operators can exploit the systems weaknesses, benefiting from poor oversight without contributing data.

11. A long list of potential options were considered against 6 critical success factors (delivers legislative & regulatory requirements, affordability, effectiveness of data collected, burden on industry, achievability, and supplier availability).

12. In addition to the baseline, two regulatory proposals have been shortlisted, and presented in this Impact Assessment. **Table 1** summarises the differences between the three options.

Table 1 – Summary of Digital Waste Tracking System options

	Waste in-scope of regulatory change	Central system for **Hazardous waste** and **POPs waste** digital records	Central system for **Non-Hazardous waste** digital records
Option 1 (baseline)	**Hazardous waste** and **POPs waste** only	**Yes** – hazardous waste and POPs waste transactions to be digitally recorded in a central system.	**No** – no change to non-hazardous waste recording.
Option 2 (delivered by these Regulations)	**All waste**	**Yes** – hazardous waste and POPs waste transactions to be digitally recorded in a central system.	**YES** – non-hazardous waste transactions will need to be recorded digitally, **but only by the receivers of waste (subset of the market)**
Option 3 (**preferred long-term option**)	**All waste**	**Yes** – hazardous waste and POPs waste transactions to be digitally recorded in a central system.	**Yes** – non-hazardous waste transactions will be digitally recorded within a central tracking service.

13. Option 1: Do minimum (baseline)

13.1 The baseline is a 'do minimum' option.

13.2 In the absence of a central DWTS for all waste, the four nations will be required to meet **legal requirements for digitally tracking waste containing persistent organic pollutants (POPs)**[11] and to **track hazardous waste** in order to meet Circular Economy

[11] Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants, as it forms part of domestic law on and after Transition Period completion day, and as amended by The Persistent Organic Pollutant (Amendment) (EU Exit) Regulations 2020.

commitments[12]. The four nations will therefore need to develop a new IT service, to enable all records of hazardous waste movements and waste containing POPs to be made available to regulators via a coordinated electronic registry. The costs and benefits associated with this POPs and hazardous waste digitalized waste tracking service have been captured in the baseline scenario, and costs for other options are in addition to baseline cost.

13.3 It is necessary to capture the costs associated with building and running the new IT service to track hazardous waste and waste that contains POPs since it is a legal requirement that has not been met yet.

Table 2 – Required changes to IT services in the baseline

Hazardous and POPs Waste Tracking (new IT)	Build a mandatory digital Waste Tracking service that will track hazardous waste (and materials and products produced from hazardous waste) and track waste that contains POPs (that may be hazardous or non-hazardous waste). This is required due to the new POPs regulations[13] that specify that POPs waste will need to be digitally trackable and due to Circular Economy commitments[14].

13.4 These new IT systems are expected to be built over a 3-year period (2026-2028) designed to meet current, and potential future, regulatory requirements. The digital tracking of hazardous waste is expected to result in some benefits compared to the current services that are in use to capture hazardous waste data (typically Excel and xml documents sent via email). However, a new Hazardous and POPs DWTS will not effectively track and monitor **all waste from production to disposal,** as there will be significant gaps in the types of waste covered by these services, most notably a large proportion of non-hazardous commercial and industrial waste and waste exported under green list controls[15]. As a result, these new IT services will not deliver the benefits that are expected from a centralised Waste Tracking

12 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/904511/circular-economy-policy-statement-annex2.pdf (page 13).

13 Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants, as it forms part of domestic law on and after Transition Period completion day, and as amended by The Persistent Organic Pollutant (Amendment) (EU Exit) Regulations 2020.

14 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/904511/circular-economy-policy-statement-annex2.pdf (page 13).

15 Natural Resources Wales / Importing and exporting waste guidance

service for all waste.

14. Option 2 (delivered by these Regulations): Implement a DWTS that requires all permitted receiving sites to submit data electronically on all waste received at their sites in near real time

14.1 Under this option, all those involved in operating a permitted waste receiving site would be required to record individual movements and transfers of waste into their waste site using the digital service provided. Businesses would have two options for how to record these waste movements and would be required to record movements on the service within two working days of a waste movement happening.

14.2 Businesses would be able to integrate directly with the Application Programming Interface (API) to upload data from their own waste data software. Following registration via the DWTS onboarding portal they will be provided their API credentials which will be added to their software to safely and securely authenticate them to send waste data (push) or update (put) waste records should change occur. This would mean that as soon as businesses recorded waste movements on their own internal systems it could immediately be transferred to the Waste Tracking service.

14.3 For businesses that don't already have their own waste management software or chose not to initially invest in new software for compliance, there would also be a temporary 12-month fallback option that is based on a secondary data submission option. They would input data directly into a secondary submission method (or copy across from their own records). These users would then be required to move to the software option after the secondary option is phased out.

14.4 Private beta started with waste software vendors & developers in November 2025 with waste receivers following on once those API connections with their software are in place. The temporary secondary data submission option will also be tested with users before launch. It is expected that registration for the public beta of the Waste Tracking service will commence in Spring 2026 and its use will be mandatory for permitted receiving sites from October 2026. Businesses will be required to pay a service charge to cover the maintenance and build costs of the service.

14.5 Option 2 would only partially deliver the intended policy outcomes. Under this option, data would be submitted only by **permitted waste receiving sites**, such as landfills, treatment facilities and recycling centres. This means information would be captured only **at the final point of the waste journey**, when waste is received for treatment or disposal.

14.6 The earlier stages of the waste chain, where waste is **produced, collected and transported** by carriers or arranged by brokers and

dealers, would not be digitally recorded. As a result, movements of waste between producers and receiving sites would remain largely invisible to regulators.

14.7 This limited coverage means Option 2 would improve data consistency at the end of the waste chain but would not provide end-to-end visibility of waste movements. Consequently, it would be less effective at identifying illegal activity earlier in the chain, reducing waste crime, or delivering the wider resource efficiency and fair competition benefits expected under the preferred long-term Option 3.

15. Option 3 (preferred long-term option): Provide a central DWTS and mandate its use[16]

15.1 Under Option 3 a mandatory DWTS for all waste will be created. It will provide a means for businesses to record all waste movements and transfers in one central service and will enable the UK to effectively track waste through the economy.

15.2 In this option, implementation would be phased. In the first phase, permitted waste receiving sites would be required to begin submitting waste data first, from October 2026. In the second phase, expected to be from October 2027, all other actors in the waste chain (carriers, brokers and dealers), would be onboarded and required to submit information on waste movements and treatment.

15.3 This phased approach allows the DWTS to be introduced in stages, supporting operational readiness for both regulators and industry while progressively moving towards full end-to-end coverage of the waste chain.

15.4 The DWTS will be an IT service that will replace the current requirement for written waste transfer notes (for non-hazardous waste), consignee returns (for hazardous waste), waste site returns and Annex VII forms for green list waste imports and exports. The service will be developed with the requirement to record and submit information on hazardous waste and the requirement to trace waste containing POPs in mind, to ensure that the requirements set out in the POPs Regulations and circular economy commitments are met.

15.5 Whilst the specifics of the digital solution for phase 2 have not yet been confirmed, for the purposes of this analysis it is assumed that there will be both a direct from software API option and a temporary backup option for 12 months that does not require businesses to have existing waste management software.

[16] Mandating that digital records of **all waste** movements and transfers are **held and submitted** by obligated businesses is an alternative scenario to the baseline – a new Waste Tracking service for **all waste**, rather than just **hazardous waste and POPs waste**.

15.6 Businesses will be financially responsible both for their own compliance costs and for contributing to the ongoing costs of operating the DWTS. This includes paying a service charge to cover maintenance and running of the central system, alongside any costs incurred by the business to purchase or upgrade waste management software where suitable systems are not already in place.

15.7 In contrast to option 2, option 3 introduces a fully end to end DWTS covering all actors involved in the movement of the waste, enabling accessible oversight, more effective enforcement, and a comprehensive dataset to support circular economy objectives. There would also be an expected reduction in waste crime due to this. This distinction between receivers only (option 2), and all waste companies (option 3), explains why option 2 delivers limited benefits and option 3 is required to achieve the full set of policy outcomes.

16. Summary of Costs and Benefits

16.1 Where Wales-only data are not available, UK-wide figures have been pro-rated to calculate Welsh equivalent figures using population, number of permitted sites, number of hazardous sites and carriers, and brokers and dealers. Figures calculated using this method have been used in combination with analysis carried out by DEFRA.

16.2 We have used an appraisal period of 15-years rather than the standard 10-years. We expect that the DWTS will have a long lifespan - longer than traditional 'off the shelf' IT systems or those based on bespoke hardware or software. The DWTS will be developed in line with the Cabinet Office's Open Standards Principles, which means the system will be built to support flexibility and future change. This is reflected in the capital costs in the early years, but maintenance costs running over the 15 year appraisal period. The system is also being developed based on user needs through user research, and these needs will continue to be reviewed when the system is in use which will help promote longevity of the system[17].

16.3 In 2025, the DWTS project was rescoped and a new supplier appointed. The costs and benefits that fell prior to this are not included in the appraisal as they are sunk costs. Welsh Government is already legally committed to deliver a waste tracking service for POPs waste and hazardous waste, which is considered in option 1 and taken as a baseline to reflect these commitments. Option 2 and 3 represent costs for those options on top of the baseline costs to ensure marginal changes against the baseline are set out.

[17] https://www.gov.uk/government/publications/open-standards-principles/open-standards-principles

Table 3: Costs and Benefits of all options, discounted and undiscounted £m, 2026 prices. All figures for option 2 and 3 are relative to the baseline

Cost		Option 1 Baseline (Undiscounted)	Option 1 Baseline (Discounted)	Option 2 (Undiscounted)	Option 2 (Discounted)	Option 3 (Undiscounted)	Option 3 (Discounted)
CDEL	UK	2.63	2.60	1.89	1.92	10.51	10.39
	Wales	0.12	0.12	0.09	0.09	0.49	0.48
RDEL	UK	6.11	4.86	8.06	6.32	24.46	21.29
	Wales	0.28	0.23	0.37	0.29	1.13	0.99
Service Charge Cost	UK			16.73	13.46	38.25	30.70

	Wales			1.06	0.86	2.02	1.62
Transition Costs	UK	5.83	5.49	2.09	2.03	22.78	21.42
	Wales	0.38	0.36	0.13	0.13	1.20	1.13
Business Familiarisation Costs	UK	0.55	0.54				
	Wales	0.04	0.04				
Software costs	UK	19.73	15.47	74.05	57.90	743.67	571.53
	Wales	1.28	1.01	4.71	3.68	39.21	30.13
TOTAL £m	UK	34.85	28.96	102.82	81.63	839.66	655.33
	Wales	1.70	1.40	6.37	5.05	44.04	34.35

CDEL, RDEL costs to government. All other costs to business. 15% Optimism bias included in all figures except service charges.

Benefit		Option 1 (Undiscounted)	Option 1 (Discounted)	Option 2 (undiscounted)	Option 2 (discounted)	Option 3 (undiscounted)	Option 3 (discounted)
Benefit From reduced crime (business)	UK					462.27	353.96
	Wales					24.37	18.66
Time saving to business from not needing to submit returns (exempt sites)	UK					0.99	0.74
	Wales					0.00	0.00
Time saving to business from not needing to submit returns (permitted sites)	UK					130.52	97.70
	Wales					8.30	6.21
Benefits from reduced waste crime (Gov)	UK					456.27	349.37

	Wales					21.15	16.19
Service charge income (Gov)	UK			16.73	13.46	38.25	30.70
	Wales			1.06	0.86	2.02	1.62
Environmental benefits from reduced crime/disamenity	UK					17.26	13.22
	Wales					0.80	0.61
Grand TOTAL £m	UK			16.73	13.46	1105.55	845.68
	Wales			1.06	0.86	56.64	43.30

17. There are no monetised benefits for Options 1 and 2 (service charge costs considered a transfer) because both deliver only limited improvements that cannot be robustly quantified. Option 1 focuses solely on meeting legal obligations for hazardous and POPs waste tracking, which affects a small subset of operators and provides minimal change to overall waste crime or efficiency. Similarly, Option 2 only captures data from permitted receiving sites, leaving major gaps in the waste chain and limiting its impact on reducing illegal activity or generating measurable savings. Regulators have stated that mandatory quarterly returns wouldn't be removed for option 2 as waste returns currently require information about both inputs of waste into sites and outputs from sites. Option 2 would only provide half of the data required so waste returns would likely continue.

18. Net Present Value and Benefit-Cost Ratio

18.1 The table below shows the Net Present Value (NPV) and the Benefit-Cost Ratio (BCR) for options 2 and 3 measured against the baseline. Our preferred long-term Option 3 has a NPV of 8.95 million and a BCR of 1.26. It is acknowledged that the NPV for Option 2 (i.e. the outcome to be delivered by this specific piece of legislation) is

negative, but is a necessary stepping stone to Option 3 which has a positive NPV.

	Option 2 (Discounted)	Option 3 (Discounted)
NPV	-£4.19m	£8.95m
BCR	0.17	1.26

19. Unmonetised Benefits

19.1 Unmonetised benefits of DWTS include improved data quality, timeliness, and accessibility, enabling regulators to target enforcement more effectively and reduce compliance risks. The system is designed to streamline processes, remove inefficiencies and reduce administrative burdens for businesses and government, while supporting better strategic policy development and infrastructure planning. It will also enhance transparency across the waste chain, strengthen market fairness by reducing opportunities for illegal operators, and act as a foundational enabler for future reforms such as Extended Producer Responsibility and circular economy initiatives. Wider societal and environmental benefits include environmental improvements, improved resource efficiency, and greater security of critical raw materials, alongside positive impacts on public health and community wellbeing through reductions in waste crime and associated disamenity effects.

20. Unmonetised Costs

20.1 Unmonetised costs under Options 2 and 3 primarily relate to compliance monitoring and additional transition burdens. Regulators may incur additional costs for overseeing compliance with new digital requirements, which could be recovered through fees but remain uncertain. Businesses, particularly small and micro operators, may face additional burdens beyond those costed, such as managing data security concerns.

Option 1: Baseline assessment

21. Note on Baseline Costs

21.1 There are costs associated with the baseline, because the government is already legally committed to introducing digital tracking for hazardous waste and waste containing persistent organic pollutants (POPs). Delivering these commitments necessitates building a new IT system, onboarding affected businesses, including familiarisation and running costs. Therefore, the baseline reflects the minimum cost of compliance with existing legislation, rather than a "do nothing" scenario, which is not legally permissible. Costs for options 2 and 3 account for the additional costs to businesses on top of the baseline.

22. IT development and set up costs (incurred by government)

22.1 There will be costs incurred in the baseline scenario associated with building a new IT system; a new Waste Tracking system for Hazardous Waste and POPs waste.

22.2 The cost of building the DWTS for hazardous waste and POPs waste is estimated to be a one off CDEL cost of £2.6m (Wales £0.12m) and ongoing RDEL cost of £6.1m (Wales £0.28m) over the appraisal period. This estimate is based on the apportioned costs of building the full Waste Tracking service for **all waste** – including IT development, system setup and agency integration costs. We anticipate the cost of this option to be much lower than the costs for the preferred long-term option since we will be making use of existing platforms such as Gov.UK forms and customising them which would mean a baseline option would cost significantly less than the preferred long-term option. Based on conversations with service delivery team, the expected cost of this option to be 20% of the cost of DWT, including accounting for any contingency spend.

22.3 An optimism bias of 15% has been applied to cost estimates in the baseline. This is to reflect uncertainty about delivery costs, and to account for potential underestimation. This is consistent and applied across the whole impact assessment.

The total baseline IT development and set up costs are summarised in Table 4.

Table 4: Summary of discounted and undiscounted baseline UK IT development costs (for government), £m, 2026 prices

	2026	2027	2028.00	2029-40	Total	Total
CDEL Hazardous Waste and POPs Waste Tracking system (new) Discounted	1.75	0.85	0.00	0.00	UK Wales	2.60 0.12
CDEL Hazardous Waste and POPs Waste Tracking system (new) Undiscounted	1.75	0.88	0.00	0.00	UK Wales	2.63 0.12
RDEL Hazardous Waste and POPs Waste Tracking system (new) Discounted	0.41	0.39	0.38	3.68	UK Wales	4.86 0.23
RDEL Hazardous Waste and POPs Waste Tracking system (new) Undiscounted	0.41	0.41	0.41	4.89	UK Wales	6.11 0.28

23. Cost to Businesses

Transition costs - Hazardous waste and POPs Digital Waste Tracking service (incurred by businesses)

23.1 This service would require hazardous waste consignors to submit additional information in their hazardous waste and POP returns through an updated IT service. The costs will be lower than those of the preferred long-term option and have been taken based on an estimate of 20% of the sites in scope of the preferred long-term option being in scope for option 1.

23.2 We have broken the transition costs for business into familiarisation costs and a transition cost to implement the new reporting method and software. Familiarisation over a two-year period (2026-2027) is predicted to cost £0.5m (Wales £0.04m) and transition cost is £5.8m (Wales £0.38m) (2026-2030).

Table 5: Summary of baseline transition costs (for businesses), £m, 2026,

	2026	2027	2028	2029	2030	2031-40		Total
Familiarisation Cost - Undiscounted	0.28	0.28	0.00	0.00	0.00	0.00	UK	**0.55**
							Wales	**0.04**
Familiarisation Cost - Discounted	0.28	0.27	0.00	0.00	0.00	0.00	UK	**0.54**
							Wales	**0.04**
Transition Cost - Undiscounted	0.28	2.88	1.15	0.89	0.63	0.00	UK	**5.83**
							Wales	**0.38**
Transition Cost - Discounted	0.28	2.78	1.08	0.80	0.55	0.00	UK	**5.49**
							Wales	**0.36**

IT service running and management costs (incurred by businesses)

23.3 Businesses will have to take on maintenance and running costs of the new IT Service to allow them to record hazardous and POPs waste in line with new legislation. This totals £19.73m (Wales £1.28m) over the appraisal period (£15.47m (Wales £1.01m) discounted).

24. Benefits

24.1 The regulatory commitment to implement digital tracking for hazardous waste and POPs waste has meant that the baseline scenario of this impact assessment is different to the current situation. It is therefore important that the benefits associated with implementing hazardous waste and POPs waste tracking are understood before presenting the additional benefits associated with implementing a Waste Tracking system for all waste.

24.2 Although Option 1 (digital tracking for hazardous and POPs waste only) shares some high level mechanisms with option 2 and 3, the benefits under option 1 cannot be treated as a proportionate subset of those estimated for wider waste tracking.

24.3 This is because the monetised benefits in option 3 are driven primarily by end-to-end visibility across the whole waste chain and across all waste types, which enables systematic reductions in waste crime (misdescription, illegal sites, fly-tipping and illegal exports). These effects rely on linking data from producers, carriers, brokers, dealers

and receivers, allowing regulators to detect anomalies, trace non-compliance, and deter waste crime at multiple points in the chain.

24.4 In contrast, hazardous and POPs waste represent a small subset of total waste, where baseline compliance is already relatively high and enforcement activity is already targeted (in comparison with all waste). Introducing digital tracking for this subset alone does not generate the same disruption to waste crime and other factors leading to the benefits seen in Option 3.

- Hazardous and POPs waste tracking does not provide visibility over non-hazardous waste flows, where the majority of misdescription, fly-tipping and illegal activity occurs.
- Any effects on waste crime or compliance are expected to be small, limited to specific cases, and not widespread across the waste system.

24.5 There is no robust empirical evidence basis for scaling down the option 3 benefits to represent option 1. Applying a simple proportion would risk overstating benefits and would not be a representative figure. There is currently insufficient data on hazardous and POPs waste (E.g. the amount of it) specifically, and on how operators and regulators will change their behaviour once digital tracking for this waste is introduced. Without this evidence, it is not possible to reliably quantify the impacts of the benefits listed below. Assumptions used to estimate option 3 benefits were using a stronger evidence base and research looking into intervention on all waste.

24.6 Therefore, Option 1 benefits remain qualitative due to high uncertainty.

24.7 Implementing a digital tracking service for hazardous waste and POPs waste alone will result in:

- **Increased income for the regulators** – the mandatory digital tracking of hazardous waste and POPs waste will result in increased compliance with the hazardous waste regime and hence an increase in income through fees[18]. This is not a transfer from business to regulators as it is a cost which businesses were avoiding, illegally, and therefore are now paying compliantly. As per Green Book guidance, bringing illegal activity into compliance should not be a monetised economic cost.
- **Increased landfill tax receipts** – misclassification of waste is typically carried out to describe waste as being non-hazardous, rather than hazardous, in order to benefit from paying the lower rate of landfill tax at £3/tonne, rather than £94.15/tonne[19]. Digital tracking of hazardous waste

[18] Whilst a Waste Tracking system for hazardous waste will negate the need for **formal** Consignment returns, instead collectingdata through the electronic system, businesses handling hazardous w aste will still need to pay for the running of the hazardous waste regime – likely to be similar to the current consignment fee system – more compliance will mean higher fees.

[19] https://www.gov.uk/government/publications/changes-to-landfill-tax-rates-from-1-april-2020/changes-to-landfill-tax-rates- from-1-april-

will make such misdescription more difficult as changes in the description of waste will be highlighted to the regulators.

- **Reduced illegal waste exports** - It is illegal to export hazardous waste to non-OECD countries, but illegal exports can be an attractive option for waste operators, as waste disposal in non-OECD countries tends to be cheaper due to less stringent environmental regulations. Digital tracking of hazardous waste will likely deter illegal exports of waste as regulators will more easily be able to identify operators involved in such criminal activity.
- **Improved knowledge of material flows** - It is expected that hazardous waste treatment operators will have to digitally record valuable secondary materials created during hazardous waste treatment – this would enable the information held to be more accessible to regulators and businesses. In addition, regulators will have improved access to data for cross-border material flows.
- **Improved compliance monitoring** - The new hazardous waste and POPs Waste Tracking service will help regulators to have more streamlined record keeping of hazardous waste and POPs waste which will facilitate easier referencing, operational research and investigations of activities. This will also allow for greater visibility and transparency on operators' activities with regards to hazardous waste and POPs waste. Improved record keeping could reduce waste crime; improve efficiency; fill data gaps and improve information on the availability of underutilised waste materials. This will lead to improved use of public money.
- **Benefits to business from not needing to submit hazardous waste returns (England and Wales)** – There may be time savings to waste sites that handle hazardous waste from no longer needing to submit consignment returns. However, this time saving may be negated by the time spent complying with the new hazardous waste and POPs Waste Tracking service.
- **IT cost savings to the regulators** – The regulators operate several IT services to manage Hazardous Waste data and returns. It is expected that the Waste Tracking service for Hazardous and POPs waste will supersede these services and therefore there will be savings associated with no longer paying for the running and maintenance of such services.
- **Reduced administration costs for regulators** – There may be time savings to regulators from having a central database of hazardous waste returns, rather than reviewing emails and spreadsheets which can be time-consuming.
- **Improved data for policy decision making** – Collecting data will allow government to implement better targeted policies and report on progress against specific targets.

Option 2 Assessment

25. Costs to Government

2020#:~:text=Landfill%20Tax%20is%20charged%20on,include%20recycling%2C%20composting%20and%20recovery. The rate is the same in Wales and Scotland for 2020: https://gov.wales/landfill-disposals-tax-rates https://revenue.scot/taxes/scottish-landfill-tax/slft-rates-accounting-periods

25.1 The costs to government under option 2 are the capital and ongoing costs of building and running the waste tracking service. These costs are first incurred in 2026, and capital build costs stop being incurred after 2027 meaning there are only running and maintenance costs from 2028 onwards.

Table 6: CDEL and RDEL costs to government in addition to the baseline (£m), 2026 prices

	2026	2027	2028	2029	2030	2031-40		Total
CDEL	2.77	-0.88	0.00	0.00	0.00	0.00	UK	1.89
							Wales	0.09
RDEL	-0.11	0.71	0.60	0.60	0.60	5.67	UK	8.06
							Wales	0.37
CDEL (Discounted)	2.77	-0.85	0.00	0.00	0.00	0.00	UK	1.92
							Wales	0.09
RDEL (Discounted)	-0.11	0.68	0.56	0.54	0.52	4.13	UK	6.32
							Wales	0.29

25.2 All of these costs will be covered by the users' service charge, so this cost to government is offset by future service charge income. The service charge has been included in the analysis as a cost to business.

25.3 A 15% optimism bias has been applied to reflect the risk that costs may be underestimated. A lower optimism bias reflects the increased level of cost certainty at this stage of policy development, as the digital service design has been explored in detailed breakdown of required resources whilst undergoing private beta and continued conversations with IT providers.

26. Costs to Businesses

Service Charge – Transfer to Government

26.1 The costs of building and running the service are initially incurred by government and recorded as a public sector cost (CDEL and RDEL). These costs are then recovered from businesses through a service charge, which is recorded as a cost to business and an equal benefit to government. The service charge is treated as a transfer, while the underlying cost of delivering the service is counted once.

26.2 The service charge has been calculated by dividing the total recoverable cost by the estimated number of users and spreading the cost over 15 years.

26.3 The build costs of the service are amortised over a 10 year period, meaning the upfront development costs are recovered gradually though the service charge. It is expected that there will continue to be a service charge to cover the maintenance costs of the service beyond the amortisation period, but that it will be reduced as it will only be covering the cost of running the service rather than building the service. This avoids the need for the programme to secure funding repeatedly through future spending rounds and ensures that the service remains financially sustainable over the full appraisal period.

Table 7: Service charge cost, £m, 2026 prices

	2026	2027	2028	2029	2030	2031-40			Total
Undiscounted	0.66	1.31	1.31	1.31	1.31		10.81	UK	16.73[20]
								Wales	1.06
Discounted	0.66	1.27	1.23	1.19	1.15		7.98	UK	13.46
								Wales	0.86

Transition costs

26.4 Under Option 2, there will be transition costs for all receiving waste sites to record their waste data on the new digital waste tracking platform. This is due to the requirement proposed under Option 2 for receiving waste businesses to record their waste movements and transfers digitally. Waste sites will still need to comply with their current duty of care requirements[21] albeit using digital rather than paper systems.

26.5 The transition costs may include familiarisation, training and new on-site technology costs (e.g., IT). In total we expect these transition costs to amount to **£2.09m (£0.1m Wales)** over 4 years (2026-2029).

26.6 This transition cost to waste sites was estimated through analysing responses to a survey shared with a sample of waste companies. In the survey, we asked businesses how they expected to comply with a Waste Tracking service for all waste. The primary way that businesses can comply with the new waste tracking service is by moving directly to submitting their waste records on a centralised IT service or provisionally use a secondary submission method for 12 months before moving to the centralised IT service.

26.7 According to a separate Waste Tracking user panel survey[22], 27% of respondents reported **only using paper recording. 20% are spreadsheet users, and 53% are software users.**

[20] Service Charge calculation is based on a 10 year amortisation.
[21] Waste sites will need to make sure that a unique code has been applied to the waste, they will need to share the details of the waste movement/transfer with the party that previously handled the waste and the party where the waste is moved to and they will be responsible for reporting what happens to the waste if it is treated or disposed of at their site.
[22] The survey polled 331 businesses and was carried out in January 2021

26.8 From the survey carried out by DEFRA in 2025 (on behalf of the project), of the software users, 76% would prefer to use Direct Upload method and 24% would prefer to use a spreadsheet upload. 100% of existing spreadsheet users would prefer to use spreadsheet upload. Of the paper users, 27% of them would prefer direct upload, and 73% spreadsheet upload.

26.9 Using these survey insights, we applied the proportions of paper, spreadsheet and software users to the total number of receiving sites and CBDs provided by regulators. This allowed us to allocate business across the different upload methods and estimate the time required for set-up and familiarisation. There were 117,853 upper tier CBDs (7,675 of these in Wales) and 11,764 receiving sites (748 of these in Wales) in scope at the time.

26.10 The project drew on assumptions from HMRC's Making Tax Digital transition, which we consider a comparable digital onboarding process. This informed the number of hours businesses are likely to spend on set up and familiarisation of the software API.

Table 8: Number of expected hours for businesses to transition

Training / Familiarisation		**Hours of Set Up**	
Transition to Software API			
Record Keeping Journey	**Hours**	**Record Keeping Journey**	**Hours**
From paper to software	8	From paper to software	6
Spreadsheet to software	4	Spreadsheet to software	2
From software to software	2	From software to software	0
Transition to temporary 12-month secondary submission method			
Paper to secondary	6	*Paper to secondary*	6
Spreadsheet to secondary	2	*Spreadsheet to secondary*	2
Software to secondary	4	*Software to secondary*	2
Secondary Method to Software			
All companies	4	*All companies*	2

26.11 Businesses that initially opt to use the temporary secondary submission method will incur an additional transition cost when they later move onto full software integration after the first year. This has been accounted for in the calculation and overall costs.

26.12 To estimate these costs, we multiplied the relevant number of firms by the expected familiarisation hours and applied the mean waste management administrative hourly wage of £21.48 (including a 22% uplift to account for non-wage costs)[23].

[23] Earnings and hours worked, by industry and occupation: ASHE Table 29 - Office for National Statistics

26.13 We expect total discounted transition cost to receiving sites to be £2.03m (Wales £0.13m).

Software costs

26.14 Under Option 2, only permitted receiving sites are required to use digital systems to submit waste movement data. Businesses already using commercial waste management software will be able to integrate directly via the API at no additional software cost. However, operators without existing compatible systems will need to purchase new software or upgrade their current tools to meet digital requirements. These software costs are expected to be recurring annual or monthly license fees charged by software vendors.

26.15 To estimate these ongoing costs, we applied the total number of receiving sites in scope (as provided by regulators) and assumed that only those without existing software would face additional expenditure.

26.16 Because market pricing for DWT software is not yet available, we used HMRC's Making Tax Digital cost assumptions as a proxy. They estimated an average annual software cost of £158 per year for a similar digital transition. Given the uncertainty around future DWT software pricing and recognising that the market is smaller compared to those that would be using tax software, we applied a 400% optimism bias adjustment, resulting in an estimated annual cost to business of £632 per year.

26.17 The optimism bias reflects the limited evidence available, the likelihood that software developers will have fewer users over which to spread development costs, and the possibility that bespoke waste tracking functionality will be priced higher than standard accounting software.

26.18 By making DWT a mandatory requirement, we are creating a clear commercial opportunity that will attract a wider range of software vendors into the market. Our engagement strategy is specifically designed to bring those vendors to the table early, helping them understand the requirements and this new market. As more software vendors participate and compete for this expanded customer base, prices will be driven down just as we saw in the Making Tax Digital market. We expect the cost of DWT software to be below market value of existing waste management software.

26.19 The software expenditure represents a commercial transaction between waste companies and software providers, covering access to and maintenance of the digital tool.

26.20 We predict software costs for receivers to be £74m (Wales £4.71m) (undiscounted), over the appraisal period.

Table 9: Software costs, £m, 2026 prices

	2026	2027	2028	2029	2030	2031-40		Total
Undiscounted	0.64	5.24	5.24	5.24	5.24	52.44	UK Wales	74.05 4.71
Discounted	0.64	5.07	4.89	4.73	4.57	38.00	UK Wales	57.90 3.68

Benefits

27. Saving to Government

Service Charge – (Transfer from Business to Government)

The full cost of building and maintaining the Digital Waste Tracking service will be recovered from users through a service charge. This creates a saving for government, as the costs that would otherwise fall to the public sector are instead funded by businesses. This is estimated to be £16.73m (Wales £1.06m) (undiscounted).

Option 3 Assessment

28. Costs to Government

28.1 The only costs to government under option 3 are the capital and ongoing costs of building and maintaining the service. Most of these costs are recoverable through the service charge for users. Build costs are expected to be higher than as under option 2. This is because this option will be for all waste companies, not just receivers. Similarly to option 2, there also will be a temporary secondary data submission method for around 12 months.

28.2 There will be a CDEL transition cost to build and implement the new waste tracking service which will cost £10.5m (Wales £0.4m) (£10.3m (Wales £0.4m) discounted) over a 2-year period (2026-2027). Maintaining the service over the appraisal period also incurs an RDEL cost of £24.46m (Wales £1.13m) (£21.29m (Wales £0.99m) discounted).

29. Cost to Businesses

29.1 Under Option 3, there will be transition costs for all permitted receiving sites and all carriers, brokers and dealers (CBDs), to record their waste data on the new Digital Waste Tracking platform. This is because Option 3 requires all businesses that produce, transport or manage waste to digitally record and submit their waste movements, rather than only receiving sites under option 2.

29.2 Please see transition costs in option 2 as the same methodology was used to calculate transition costs in option 3. This includes HMRC Making Tax Digital assumptions for number of hours taken for set up and familiarisation, the number of receivers/CBDs provided by regulators and ONS hourly rate for waste management admin staff. These costs are expected to be higher than in option 2 because the number of businesses in scope is significantly greater.

29.3 In total, transition costs under option 3 account to £2.09m (Wales £0.13m) (£2.03m (Wales £0.13m) discounted) for receiving sites and £22.78 (Wales £1.20m) (£21.42m (Wales £1.13m) discounted) for CBDs, over a 5-year period (2026-2030).

Table 10: Number of sites in scope

Record Keeping Journey	Receiving Sites (UK)	CBDs (UK)	Receiving Sites (Wales)	CBDs (Wales)
Software to Secondary	1498	15008	95	954
Paper to Software	852	8536	54	543
Paper to Secondary	2269	22731	144	1445
Software to Software	4744	47526	302	3022
Spreadsheet to Secondary	2401	24052	153	1529

29.4 Businesses that initially opt to use the temporary secondary submission method will incur an additional transition cost when they later move onto full software integration after the first year. These have been accounted for in the costs below.

Table 11 – Transition costs to businesses during the transition period in comparison to baseline option 1, includes both receiving and CBD– best estimate, 2026 prices

Year, £m	2026	2027	2028	2029	2030		Total
Undiscounted	0.83	11.25	4.62	3.57	2.51	UK	22.78
	0.04	0.59	0.24	0.19	0.13	Wales	1.20
Discounted	0.83	10.87	4.31	3.22	2.19	UK	21.42
	0.04	0.57	0.23	0.17	0.12	Wales	1.13

30. Service Charge Costs

30.1 The ongoing running and management costs of a Waste Tracking service for all waste, a total cost of £38.25m (Wales £2.02m) (£30.70m (Wales £1.62m) discounted) over the appraisal period, will be met by users of the service through an annual service charge. We expect that the running and management costs of a service for all waste businesses will be higher than in option 2. The build and running costs under a Waste Tracking system for all users will be spread between more businesses (an additional 117,853 upper tier CBDs (7,675 in Wales) than a system for permitted receiving sites only (11,765 sites (748 in Wales), resulting in a lower 'per business' cost. As with option 2, after year 10 of the service the full build cost will have been amortised, resulting in a lower service charge.

31. Software Costs

31.1 Businesses will need access to waste management software in order to comply with DWT service. Some operators already use commercial software to manage waste records, but those who do not will need to purchase software or upgrade their existing systems. These software costs are expected to be recurring (monthly or annual license fees charged by software vendors).

31.2 To estimate these ongoing costs, we applied the total number of receiving sites and CBDs (as provided by regulators) and assumed that only businesses who have existing software and moving to the software API option, will not have to pay for software.

31.3 Because software costs haven't been derived yet, for the scale of the proposed digital waste tracking software, we used HMRC Making Tac Digital assumptions as a base. This represents a large-scale digital transition where businesses were required to adopt compatible software. HMRC estimated an average annual cost of £158 per business. Given the uncertainty around the price point for DWT software and recognising that the DWT market will be considerably smaller than the digital tax market, we applied a 400% optimism bias, resulting in an estimated cost of **£632** per business per year.

31.4 The higher optimism bias reflects:

- Uncertainty about how software providers will price the DWT compatible software.

- The likelihood that providers will have fewer customers than in the Making Tax Digital market, reducing their ability to spread costs and make it cheaper for businesses.

- The absence of clear evidence on future digital waste tracking software pricing that will be used as widely as this.

31.5 The software fee paid by businesses represent a market transaction between businesses and software providers, where businesses purchase access to DWT software and software providers receive revenue to exceed their development and maintenance costs.

31.6 We estimate that the total discounted cost of software to receivers and CBDs will be £571.5m (Wales £30.1m), £743.6m (Wales £39.2m) undiscounted.

Table 12: Software costs option 3, £m, 2026 prices

	2026	2027	2028	2029	2030	2031-40		Total
Undiscounted	0.28	10.24	56.39	56.39	56.39	564.00	UK	743.67
	0.01	0.54	2.97	2.97	2.97	29.73	Wales	39.21
Discounted	0.28	9.89	52.64	50.85	49.14	408.74	UK	571.53
	0.01	0.52	2.78	2.68	2.59	21.55	Wales	30.13

32. Overall Benefits

32.1 Option 3 will offer significant benefits to society, regulators, businesses and the governments. These benefits include increased efficiency within the agencies, savings to businesses from recording data digitally and reduced time spent on submitting data returns, and savings to central government from reduced costs associated with building and running alternative IT solutions. All parties will also benefit from reduced waste crime.

32.2 For the 2015/16 financial year, we used the figures referred to in NRW's 2020 Sonarr Table 5 (source: Eunomia estimates) – in total they calculated that waste crime costs amounted to £15.2-32.4m (in 2016 prices).

32.3 This research has been drawn upon to improve our understanding of the **scope** for beneficial outcomes to different parties from reducing waste crime, and to help monetise some of the expected impacts that a central Waste Tracking system for all waste could have.

32.4 We have made a series of assumptions about the expected impact of reduced waste crime as a result of implementing a central Waste Tracking service for all waste. These assumptions have been developed in conjunction with the regulators.

Table 13 – Estimated costs of waste crime by type in Wales 2015-16

Type	Cost Range (£m)
Illegal waste sites	£2.3–5.6 million
Waste fires	£0.7–1.1 million
Fly-tipping	£4.7–11.8 million
Misclassification	£1.3–7.3 million
Permit breaches	£4.9 million
Illegal exports	£1.3–1.7 million
All types	£15.2–32.4 million

Benefits to Government and the Regulators

33. Increased Tax Revenues from Reductions in Waste Crime

33.1 Digital Waste Tracking is expected to reduce several types of waste crime by increasing transparency, improving traceability and enabling more intelligence led intervention. As more waste is diverted from illicit channels into legitimate treatment facilities, tax receipts that were previously lost due to criminal activity return to the public sector.

33.2 The subsection below explains how increased tax revenue has been estimated for each waste crime. In each case tax revenue that should already have been received in the absence of waste crime. We expect all these benefits to begin to be realised from 2028.

33.3 This is a transfer cost from businesses to government, but given that these costs should have been being paid by business under the baseline, we have excluded the equivalent monetised costs to businesses in the calculation of the NPV £8.95m. With a cost benefit ratio of 1.26.

33.4 Benefits from a reduction in waste crime are split into increased landfill
taxation due to the following:

- Reduced Misdescription of waste
- Reduction in Illegal Waste sites
- Reduction in illegal waste exports
- Reduction in fly tipping.

33.5 A fully implemented, end-to-end DWT is expected to provide more comprehensive, timely and connected data across the waste chain, enabling more systematic and intelligence led interventions. Consequently, the quantified benefits could be conservative and may underestimate the full potential impact of DWT on reducing waste crime once the system is fully embedded.

34. Increased Landfill Tax resulting from reduced misdescription of waste

34.1 Misclassification of waste can occur at any point in the waste management chain – either accidentally or deliberately. The financial implications of misclassification can be significant, for instance, waste classified as 'inactive'[24] is eligible for the lower rate of Landfill Tax.

34.2 It is expected that Waste Tracking for all waste under Option 3 will make it easier for agencies to identify misdescription. It will remove at least some, if not all, of the need for time intensive waste stream audits and the scanning of paper waste transfer notes on which misdescription work is currently based. Waste Tracking will enable better insight of waste being rejected at disposal sites due to misdescription (either accidental or fraudulent) and regulators will be able to follow up with the parties involved much more effectively as a result of the improved information they will have from the Waste Tracking service.

34.3 A fully digital end to end tracking system removes many of the weaknesses of the current non-centralised process. DWTS will:

- Highlight changes in waste description as materials move along the chain
- Provide regulators with information on waste rejected due to misdescription
- Remove reliance on labour intensive audits and manual review of paper notes
- Allow targeted follow up with the relevant parties based on complete digital records.

34.4 Together, these improvements increase the likelihood that misdescription is detected and reduce the incentives for operators to misclassify waste.

35. Increased taxation resulting from a reduction in Illegal waste sites and waste permit breaches

35.1 Criminal activity can be perpetrated by individuals or organisations through a breach of an environmental permit or the operation of an illegal waste site. Examples include deliberately accepting too much waste, storing waste in an inappropriate manner or accepting waste that is not allowed under a certain permit.

[24] Inactive waste covers most materials used in a building's fabric as well as earth excavated for foundations. Most forms of concrete, brick, glass, soil, clay and gravel are classified as inactive.

35.2 By mandating that waste operators digitally record and submit their waste movements and transfers, the Waste Tracking service will make it harder for waste operators to run, or support, illegal sites (including waste sites breaching their permit conditions). In addition, a Waste Tracking system for all waste will enable regulators to build a more complete picture of waste production at sites that do not hold environmental permits. This would enable regulators to carry out data analysis of entire sectors and identify anomalous sites that are worthy of further investigation.

35.3 We expect that with a central Waste Tracking system in place, some waste that would have been handled on illegal sites will instead be handled by authorised facilities in the legitimate market – offering benefits to businesses through increased profit and therefore the government through increased taxation (VAT, corporation tax and landfill tax) and the regulator through more cost-efficient enforcement[25].

36. Increased taxation resulting from a reduction in illegal waste exports

36.1 Whilst some wastes can be exported legally for recycling and recovery, it is illegal in almost all cases to export untreated waste from the UK for disposal[26]. Understanding the scale of illegal waste exports is extremely difficult. Current data are unreliable and incomplete[27], due to the data being based mainly on the crimes that are detected.

36.2 Waste Tracking will enable intelligence-led enforcement which we expect will deter operators from illegally exporting waste.

36.3 There may be further benefits to the public sector from reduced illegal waste exports in the form of reduced repatriation costs. Not only will Waste Tracking reduce the likelihood of illegal waste exports occurring in the first instance, but the regulator will have increased intelligence to identify the illegal operator(s) involved and to ensure that the repatriation costs are recuperated from the offending operator(s).

37. Increased taxation resulting from a reduction in fly-tipping (transfer from businesses to government)

37.1 Fly-tipping is a wide-ranging offence, defined as the illegal deposit of household, industrial, commercial, or other 'controlled' waste without an appropriate waste management authorisation. In many instances it is an opportunistic, one-off occurrence, with perpetrators seeking to avoid

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[25] The Waste Tracking service will provide intelligence and evidence to assist the regulators with compliance monitoring and targeted enforcement activity.

[26] The Transfrontier Shipment of Waste Regulations 2007 define the procedures, offences and penalties relating to the export of waste from the UK.

[27] Currently green list waste movements shipped under Article 18 controls are only reported to NIEA and SEPA – there is no oversight of these exports from England or Wales

waste treatment or disposal costs.

37.2 The Waste Tracking service will be able to directly address the fly-tipping of commercial waste, arising from construction, demolition, excavation, and other commercial activity. This is because all commercial waste will be tracked from where it is produced to where it is disposed of.

Table 14: Waste crime benefits to government, option 3, £m, 2026 prices

	2026/7	2028	2029	2039	2031	2032-40		Total
Undiscounted	0.00	35.10	35.10	35.10	35.10	315.88	UK	456.27
	0.00	1.63	1.63	1.63	1.63	14.64	Wales	21.15
Discounted	0.00	32.76	31.65	30.58	29.55	224.81	UK	349.37
	0.00	1.52	1.47	1.42	1.37	10.42	Wales	16.19

Benefits to businesses

38. *Reduction in Waste Crime*

38.1 The benefits to businesses from reduced waste crime are based on the same sources described above in the 'reductions in waste crime – benefits to government in the precious section.

38.2 Reduction in illegal waste sites and breaches of permits – reduced illegal waste sites and breaches of waste permits will result in increased profit for legitimate operators. Illegal operators avoid key costs, such as landfill tax, permit fees, and compliance requirements, which allows them to undercut compliant businesses. By improving traceability and making non-compliant activities harder to conceal, DWT reduces the viability of illegal operations and shifts more waste into legitimate market. As a result, authorised operators gain additional waste volumes and face less unfair price competition, leading to higher revenues and improved profitability across the compliant sector.

38.3 Reduction in illegal waste exports – reduced illegal waste exports will result in additional profit for legitimate waste operators. Illegal exporters avoid disposal and treatment costs by sending waste overseas unlawfully, allowing them to offer lower prices and capture market share from complaint businesses. By improving traceability and enabling regulators to detect and prevent illegal exports, more effectively, DWT reduces the scope for this type of activity. As more waste remains within the UK waste management system and is handled through legitimate channels, complaint operators gain additional waste volumes and volumes that would otherwise have been diverted illegally.

38.4 Reduction in fly-tipping – Reducing commercial fly-tipping is expected to increase profits for legitimate operators. When businesses or contractors avoid disposal costs by illegally dumping waste, compliant operators lose potential revenue from lawful collection, treatment and disposal of waste. By improving traceability and making it harder for waste to disappear from the system, DWT reduces opportunities for fly-tipping. As more commercial waste is routed through authorised facilities instead of being dumped illegally, legitimate operators benefit from higher waste volumes and increased income.

Table 15: Waste crime benefits to business, option 3, £m, 2026 prices

	2026/7	2028	2029	2039	2031	2032-40		Total
Undiscounted	0.00	35.56	35.56	35.56	35.56	320.03	UK	462.27
	0.00	1.87	1.87	1.87	1.87	16.87	Wales	24.37
Discounted	0.00	33.19	32.07	30.99	29.94	227.77	UK	353.96
	0.00	1.75	1.69	1.63	1.58	12.01	Wales	18.66

39. *Savings from no longer needing to submit waste returns (permitted site returns)*

39.1 We expect that there will be savings to waste operators from no longer having to submit waste returns. Under Option 3, the DWTS would capture end-to-end data on waste movements, including both inputs and outputs from waste sites. This provides the same information currently collected from these quarterly returns, allowing those returns to be removed by regulators. In contrast Option 2 only captures data on waste received at sites and does not provide visibility on waste movements or outputs, meaning waste returns would still be required and cannot be removed under that option. This has been discussed with regulators.

39.2 To estimate this saving, we engaged with the Waste Tracking user panel. We asked the panel how long they currently spend submitting permitted site returns and waste exemption returns and how often they submit these. The responses were analysed and significant outliers were removed.

39.3 Using the median wage for workers in waste disposal (£20.72, from the Annualised Survey of Hours and Earnings[28]) and inflating this

28 https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/adhocs/11690annualsurveyofhoursandearningsasheestimatesofearningscoveringfourdigitoccupationbypublicandprivatesectors median 2020 wage for "Private, Waste disposal and environmental services managers".

by 1.5% per annum to project wage rates from 2023 onwards, and then inflating this by 22% to include non-wage costs, we obtained the estimated savings from no longer needing to submit Permitted and non-hazardous waste exempt site returns.

39.4 Regulators will remove quarterly site returns from 2028.

Table 16 – monetised savings to businesses from no longer having to submit waste returns for permitted sites or non-hazardous waste exempt sites

		Hours Saved	Returns made per year	Annual saving (undiscounted)
Exempt site returns (savings applied to exemptions for non-hazardous waste only	UK	3784	1	£81,292
	Wales	0	0	£0
Permitted site returns	UK	501092	4	£10,765,571
	Wales	31859	4	£684,458
Total	UK	504876		£10,846,863
	Wales	31859		£684,458

Table 17: Time savings to business, option 3, £m, 2026 prices

		2026/7	2028	2029	2039	2031	2032-40	Total
Permitted Sites-Undiscounted	UK	0.00	0.00	8.33	11.11	11.11	99.97	130.52
	Wales	0.00	0.00	0.53	0.71	0.71	6.36	8.30
Exempt Sites-Undiscounted	UK	0.00	0.00	0.06	0.08	0.08	0.75	0.99
	Wales	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Permitted Sites-Discounted	UK	0.00	0.00	7.51	9.68	9.35	71.15	97.70
	Wales	0.00	0.00	0.48	0.62	0.59	4.52	6.21
Exempt Sites-Discounted	UK	0.00	0.00	0.06	0.07	0.07	0.54	0.74
	Wales	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Benefits to Society and the Environment

40. Societal and Environmental benefits from reductions in waste crime

The Environment Agency's waste crime intervention and evaluation research[29],the ESA's 'Rethinking Waste Crime' report and the ESA's 'Counting the cost of UK Waste Crime' have been reflected on to derive the expected reduction in waste crime following the implementation of a central Waste Tracking service. For Wales, we reflected on NRW's Sonarr 2020 which included the estimated costs of waste crime by type (Table 5 refers, which was sourced from Eunomia estimates)[30].

41. Illegal waste sites and breaches of permits

41.1 Illegal waste sites can blight local communities through the release of foul odours, pollution of surface or ground water, noise and dust from vehicle movements or on- site operations, or smoke from fires.

42. Fly-tipping

42.1 The ESA's Rethinking Waste Crime report estimates that fly-tipping has an annual cost to wider society of £16.8m (2020 prices, UK-wide cost) from carbon impacts. NRW's Sonarr 2020 report estimates that fly-tipping cost £4.7-11.8m in 2015/16[31] (2016 prices).

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[29] https://assets.publishing.service.gov.uk/government/uploads/service/uploads/attachment_data/file/662841/Waste_crime_interventions_and_evaluation_-_report.pdf (page 56).

[30] sonarr2020-theme-waste.pdf

[31] Note: Fly-tipping costs are estimated for those cleared by NRW and Local Authorities in Wales. Does not include clearance costs for fly-tipping on private land.

42.2 Illegal waste sites, illegal waste exports and fly tipping all result in disamenity benefits. The methodology in this section calculated the contribution to the benefits from each reduction (uplifted to 2025 prices), total disamenity benefits were then included in the IA, as per the table below.

Table 18: Disamenity Benefits, option 3, £m, 2026 prices

		2026/7	2028	2029	2030	2031	2032-40	Total
Undiscounted	UK	0.00	1.33	1.33	1.33	1.33	11.95	17.26
	Wales	0.00	0.06	0.06	0.06	0.06	0.55	0.80
Discounted	UK	0.00	1.24	1.20	1.16	1.12	8.51	13.22
	Wales	0.00	0.06	0.06	0.05	0.05	0.39	0.61

43. Why Option 2 does not deliver Option 3 benefits

43.1 Option 2 does not deliver some of these benefits because it lacks full chain visibility of the waste system. Under option 2, only receiving sites submit data, meaning that waste movements between producers, carriers, brokers and dealers are not captured.

43.2 Without this end-to-end traceability, regulators cannot reliably detect waste crime, reconcile missing or misdescribed waste, or identify where in the chain compliance failures occur. This limits the systems effectiveness in reducing illegal activity, increasing tax compliance, or supporting more efficient regulation.

43.3 As a result, the types of monetised benefits expected under Option 3, such as reduced waste crime, increased tax revenues, and reduced regulatory burdens, cannot be attributed to option 2.

44. Non-Monetised Benefits (Option 2 and 3)

44.1 Many of the benefits associated with DWTS are difficult to monetise because they arise from improvements in information, transparency and regulatory capability, rather than from direct behavioural changes that can be confidently quantified. However, this does not detract from the value of these benefits, and they should be considered alongside those that we have been able to monetise.

44.2 Enabling benefits such as more accurate and timely data, improved regulatory targeting, better evidence for policy development, strengthened compliance monitoring and reduced operational inefficiencies, all depend heavily on how government, regulators and business choose to use the improved data and technological capability. The scale and timing of these impacts attributed to DWT are uncertain and cannot be quantified accurately.

44.3 Additionally, some other benefits relate to avoided harms (e.g. avoided environmental damage, avoided regulatory failure), which are inherently challenging to forecast without strong empirical evidence. As a result, these impacts are captured qualitatively as unmonetisable enabling benefits rather than quantified estimates.

44.4 The benefits outlined below are relevant to both option 2 and option 3. However, the magnitude of each benefit is expected to be significantly greater under option 3, compared to option 2.

Enabling Benefits

44.5 As a large-scale digital transformation programme, a significant portion of the value of DWTS derives from improvements in capability that DWTS will enable for future government policies, government functions and market actors. DWTS is a foundational enabler, provided underlying digital, data and system infrastructure required for a wide range of current and future waste, environmental and regulatory reforms to function effectively. These enabling benefits are critical to delivering long-term value but cannot be easily quantified or monetised.

DWTS as a foundational data and technology enabler

44.6 DWTS provides enabling benefits arising from **improved data and technology capabilities** that are currently not possible under fragmented, paper-based or inconsistent data systems. These include:

- **Improved data capabilities:**
  DWTS will bring significant benefits by improving the availability of quality data and expanding the evidence base available to government and regulators. Improvements include:
  - **Greater data coverage –** DWTS will deliver **a standardised national dataset**, replacing inconsistent, incomplete and

incompatible data sources. will significantly **expand the scope of data reported** on waste movements, enabling a much broader evidence base (particularly under Option 3).
    - **Better quality data –** by digitising waste movement data, DWTS will significantly improve consistency **of data collected and reported** as well as **reducing avoidable errors** from paper-based reporting, thereby improving accuracy.
    - **More timely data** – DWTS will provide **near real time waste movement data** enabling better monitoring of waste movements as, or soon after, they happen, improving regulator capability to monitor compliance and target enforcement.
      Better data improves ability to carry out analysis, modelling, and performance evaluation, all further contributing to the evidence base for understanding waste movements.

- **Improved technology integration and agility:**
    - **Digital integration across the waste chain**, enabling compatibility with existing and planned systems (e.g. Extended Producer Responsibility (EPR) reform, plastics and packaging
    - **Technology agility and scalability**, providing a platform that can be adapted as policy needs to evolve.

These improved data and technology capabilities will enable many important benefits including:

- **Improved insights for policy development:** These capabilities allow government to implement and evaluate a much wider range of policies than currently possible. The four nations can use the information collected in the Waste Tracking system to inform future policy decisions. Waste Tracking will also provide the means to make more, and better, data widely available in line with the government's focus on open data. In the absence of DWTS, future reforms would be constrained by incomplete information, manual processes and limited near real time oversight.
- **Innovation and responsiveness:** DWTS enables policies that government could not implement previously (e.g. more granular waste related incentives).
- DWTS **will support more effective regulation:** DWTS will provide regulators with the data and information they need to carry out targeted interventions, to further support legitimate businesses, to extract maximum value from data and to work more efficiently.
- **Risk and compliance improvements:** DWTS reduces the risk of regulatory failure and weak enforcement, but these avoided failures cannot be reliably monetised and forecasted.
- **Operational improvements and efficiency savings:** Routine work carried out by businesses, regulators, LAs and governments will likely be done automatically, to some extent, which will result in efficiency savings for all parties. For example, the government will need to issue fewer surveys and will spend less time responding to data requests. This includes time savings from the removal of mandatory quarterly returns for waste sites (from October 2028)

which we have monetised. Efficiencies in regulator targeting, inspections and case handling depend on how agencies allocate their saved time. Businesses will have better information to enable them to operate more efficiently.

- **Improved business experience when complying with data sharing commitments** –DWTS should make complying with regulation easier and less time-costly for businesses. This has been partially monetised in the form of time savings from the removal of mandatory quarterly returns for waste sites.
- **Improved data for investment decisions** - Waste Tracking will improve the quality of data for business investment decisions.

DWTS as a cross-government enabler of circular economy reforms

DWTS is a core component of the wider waste reform landscape. The enabler benefits enables effective implementation of:

- **Devolved circular economy strategies:** enabling consistent data sharing across the four nations.
- **Wider government sustainability and net-zero objectives,** which depend heavily on robust resource use data.

Without DWTS, it would be more difficult for these reforms to achieve their intended outcomes, as necessary data pathways, transparency and oversight would not exist.

Why option 2 cannot capture the enabling benefits that Option 3 deliver

Option 2 collects only a subset of data (from receiving sites), which limits its enabling power because:

- Data gaps remain for producers, carriers and other waste handlers.
- Material flows cannot be understood end to end.
- Waste crime detection would be much weaker without full chain traceability.
- Integration with other reforms is significantly constrained because downstream policies depend on producer level and movement level data that option 2 cannot provide.

Therefore, Option 2 does not create the enabling foundation required for most future reforms.

Other non-monetised benefits

44.7 A safer, cleaner environment through reduced greenhouse gas emissions – By providing better data on the volume, composition and destination of waste, opportunities to reduce greenhouse gas emissions could be more easily identified. Such opportunities could include diverting waste from landfill or incineration and/or reducing

energy-intensive resource extraction. Reduced greenhouse gas emissions would result in a safer and cleaner environment and this would deliver widespread benefits for the environment and society.

44.8 **Increased gate fee revenue** – A gate fee is the fee levied on a quantity of waste received at a waste processing facility. The fee differs depending on the composition of waste. Reduced misdescription of waste will result in fewer incidents of operators attempting to reduce their gate fee charges by misdescribing their waste.

44.9 **Resource efficiency** – DWTS will increase the flow of waste back into the economy. By digitising data, businesses/regulators will improve their understanding of the type and quantity of waste generated and this will enable businesses and regulators to identify high-value opportunities that increase resource productivity. For example, by facilitating improved data on the composition and destination of waste that could be repurposed, there could be a reduction in the amount of avoidable waste sent to landfill or incineration. In addition, if waste managers increase their engagement with the secondary material market, producers will have improved access to recycled material and hence will be less reliant on raw materials.

44.10 **Greater security of supply of critical raw materials** – By increasing our understanding of where we are 'losing' critical raw materials currently, we can carry out targeted interventions to divert these materials to recycling and reuse.

44.11 **Compliance with duty of care** – A waste producer will likely be better informed about what has happened to their waste and this will increase their confidence that they are legally compliant with the duty of care regulation[32].

[32] https://www.gov.uk/government/publications/waste-duty-of-care-code-of-practice

45. Non-Monetised Costs (Option 2 and 3)

Compliance monitoring costs (chargeable to industry)

45.1 Currently, the costs of compliance monitoring of operators that handle **hazardous waste** is chargeable to operators through the payment of **consignment fees**. As part of the proposals for a Waste Tracking service for all waste types, regulators would also be able to recover the costs associated with monitoring the compliance of operators that handle non-hazardous waste. The functions that would be in-scope of cost recovery are yet to be confirmed. The regulators, devolved governments and Defra officials are working closely to establish these functions and an associated cost estimate.

Transition costs to producers

45.2 Transition costs for producers of waste could include the time cost of staff familiarising themselves with the new regulations and the time cost of training staff to effectively comply with the regulations.

Quantified costs:

- Transition costs have been monetised where producers also act as waste carriers, brokers or dealers (CBDs), as these businesses are required to create and submit DWT records as the arranger of waste movement.
- These costs are included within the CBD transition cost estimates presented elsewhere in this assessment and capture set up and familiarisation required to comply with DWT.

Unquantified costs:

- We have not separately monetised transition costs for producers who do not act as carriers, brokers or dealers, due to:
    - Uncertainty over the total number of waste producers in scope
    - Uncertainty over how many producers would choose to enter DWT records themselves rather than relying on waste carrier or broker.

Rationale:

- Under the DWT policy, the legal responsibility for creating the waste tracking record sits with the person arranging the waste movement, which will typically be the carrier or broker, not the waste producer.
- As a result, most producers are expected to incur minimal additional transition costs, limited primarily to understanding the requirements and receiving a DWT record reference from their waste contractor.
- Any additional transition costs faced by producers who voluntarily choose to enter data themselves are expected to be small and case specific, and there is insufficient evidence to robustly quantify these at this stage.

45.3 **Transition costs to exempt waste sites** – Many exempt waste sites will incur transition costs to comply with the requirements to digitally record details about the waste they receive under Option 3. The transition costs are likely to be similar to those that we assume will be incurred by permitted waste sites in Option 2: staff training costs, familiarisation costs, customer engagement, changes to current IT services and the provision of any on-site technology. We have not been able to accurately estimate the costs to these businesses.

45.4 The transition costs to exempt waste sites will differ significantly between individual sites depending on how much waste they handle and their current use of IT services. Unlike permitted sites, exempt sites are not required to pay to register and registration last three years. As a result, a large number are registered ‘just in case’. This means we cannot reliably determine how many exempt sites are active. Without an accurate count of active sites, it is difficult to produce a defensible cost estimate.

46. Risks and Assumptions

- The waste management industry has a good understanding of the waste generated by their customers, as well as detailed information on waste treatment and final destinations, but this information is often viewed as commercially confidential by the waste management industry. Therefore, in order to increase the access to such data through Waste Tracking, the waste management industry would need assurances over data security, the granularity of publicly available information, and commercial confidentiality.

- The waste crime reduction assumptions are not based on evidence related specifically to a Waste Tracking intervention. The digital Waste Tracking service is a novel service and as such we do not have access to domestic or international evidence on the impacts that it will have on waste crime reduction. We have instead used evidence on the impacts of targeted interventions to reduce specific waste crimes. The targeted interventions have some similarities with the Waste Tracking service insofar as they all include an element of improved data.

Given the uncertainty, we have ensured that the estimates are reasonable by discussing the impacts with experts in the devolved administrations and the regulatory bodies.

- The IT building cost assumptions for the hazardous waste and POPs Waste Tracking service are assumed to be the same as the outstanding costs for building the central Waste Tracking service for all waste. It is possible that because the hazardous waste and POPs Waste Tracking service covers fewer waste types than the Waste Tracking service for all waste, the build costs may be slightly lower.

- The time savings to permitted waste site and local authorities associated with no longer needing to submit specific waste returns were based on questionnaire responses and therefore may not reflect an accurate average time saving across the industry. The proposed time savings have been reviewed by policy experts and sense-checked for accuracy before being included in the appraisal.

- The number of businesses that will be impacted by the reforms is uncertain. For example, it might be the case that not all exempt waste sites will be required to comply with the reforms. Although regulators provided a list of carriers, brokers, dealers (CBDs) and exempts waste sites, these registers do not reliably reflect the number of active operators. Registration last for 3 years, meaning registered entities may no longer be trading or may not be engaging in waste activities at all. Similarly, exemptions can be free to register, which can lead to over-registration.

47. Sensitivity Analysis

47.1 The sensitivity analysis assessed how the estimated costs and benefits of the policy scenarios, may vary due to uncertainty in key input variables used in the modelling. In the analysis, we looked at uncertainties that predominantly affected the costs and benefits to businesses.

Table 19: Variables tested for sensitivity analysis

Sensitivities	Sensitivity Description
Removal of sites quarterly returns requirement	The current assumption is that the requirement for sites returns would be removed in October 2028, based on information provided by regulators. Since this timeline is uncertain, we have tested an alternate scenario ; 6 months later (April 2029). There is a reduction in time savings benefit to business of £5m (£0.32m Wales) (undiscounted), over the appraisal period.
Fly tipping – 25% reduction assumption	We have assumed that digital waste tracking will reduce fly-tipping by 25% . This estimate is based on policy expertise of the industry, so we have tested this assumption by using a high and low estimate (35% and 15%). At 35%, there is an increase to business benefit by £3m (£0.14m Wales) a year, and at 15%, a decrease by the same amount, undiscounted.

Improved competition within the waste sector

47.2 Illegal waste operators tend to impede competition by undercutting compliant businesses. Under the preferred long-term option, DWTS is expected to prevent non-compliant waste operators from entering or remaining in the sector, in turn increasing the proportion of waste that is handled legally. The reduction in unfair competition and legitimate business' increased access to waste may result in greater investment within the sector, for example, through increased labour force or capital investments. Businesses that are only able to remain operational due to illegal activity that reduces their costs may not be able to remain in the market, potentially acting as an economic barrier to some operators.

48. Waste Crime Sensitivity

48.1 A sensitivity analysis has been undertaken to illustrate how the estimated benefits vary when applying the high and low assumptions already set out earlier in this Impact Assessment.

48.2 The scale of waste crime benefits is inherently uncertain and may vary due to a range of behavioural and operational factors. These include differences in how quickly businesses adopt and comply with DWT, how effectively regulators are able to use the data to target enforcement, and the extent to which illegal operators and deterred or displaced from the market. As a result, the realised benefits may be higher or lower than central estimates, depending on these factors over time.

48.3 The table below presents the resulting cost ranges under these alternate assumptions and demonstrates the extent to which the appraisal results are sensitivity to uncertainty in key inputs. This analysis provides transparency around the robustness for the cost estimates.

Table 18: Waste Crime benefits sensitivity (over the appraisal period, undiscounted)

Waste Crime Type		Estimate	Public Benefit	Business Benefit	Wider Society Benefit
Misdescription of Waste	UK	Central	317.38	N/A	N/A
		Low	270.00		
		High	332.56		
	Wales	Central	14.71	N/A	N/A
		Low	12.52		
		High	15.42		
Fly-tipping	UK	Central	70.76	385.11	0.23
		Low	43.87	238.75	0.14
		High	97.65	531.48	0.32
	Wales	Central	3.28	17.85	0.01
		Low	2.03	11.07	0.01
		High	4.53	24.64	0.01
Illegal Waste Sites	UK	Central	25.15	62.43	15.23
		Low	22.77	31.99	7.81
		High	27.53	92.86	22.66
	Wales	Central	1.17	2.89	0.71
		Low	1.06	1.48	0.36
		High	1.28	4.30	1.05
Illegal Waste Exports	UK	Central	7.80	0.13	N/A
		Low	7.01	0.12	
		High	8.59	0.15	
	Wales	Central	0.36	0.01	N/A
		Low	0.32	0.01	
		High	0.40	0.01	

49. Competition Aspects

49.1 The key impact on competition will be encouraging a more level playing field within the waste industry and supporting legitimate businesses. We expect that the Waste Tracking system will move a significant proportion of illegally handled waste to being handled legally. This shift will offer opportunities to legitimate businesses, in terms of increased access to waste from which businesses can profit, and in turn improved opportunities to invest in their business (either through increased labour force or capital investments) as a result of having greater scope for profit. A more level playing field should also improve efficiency within the sector.

49.2 Only operators who can afford to comply with digital Waste Tracking will stay in the market. As such, increased investment and running costs may be an economic barrier to entry to some. However, this intervention has been carefully designed to prevent illegal and non-compliant waste operators from entering or staying in the waste sector, whilst still enabling compliant businesses to operate by ensuring costs of compliance are set at a reasonable level.

49.3 By addressing underlying information and coordination failures in the waste sector, Digital Waste Tracking will create a shared, reliable data source across the waste chain. This transparency will help legitimate businesses better understand waste flows, identify cost-saving or recycling opportunities, and compete fairly. It will also improve coordination between regulators and industry, reducing duplication and inefficiencies. Together, these effects should support a more efficient and competitive market, where compliant operators can thrive and investment is directed toward legitimate activity.

50. Conclusion

50.1 Option 3 is the preferred long-term option because it provides the best value for money for the taxpayer while achieving the policy aims and intended effects. Options 1 and 2 are not preferred because the current detrimental impacts incurred by the natural environment, local communities and legitimate businesses would not be sufficiently addressed.

50.2 Without the ability to effectively and efficiently track all waste and communicate timely relevant data (as proposed under option 3) we risk the following impacts:

- Further environmental damage;
- Operational inefficiency and;
- Fewer investment opportunities for innovation.

51. Monitoring and Evaluation and the Post Implementation Review

The intention is to monitor the impact of the Waste Tracking policy with the view to evaluating the regulatory measures in a post implementation review in 2028. The PIR will aim to analyse data captured through the Waste Tracking service, and data gathered through stakeholder engagement and calls for evidence to assess:

- **The impact of Waste Tracking on waste crime** - The specific data we will look to gather to support the PIR will be the estimated number, and scale, of illegal waste sites, illegal waste exports and waste operators in operation following the implementation of the reform. We will also review the amount of different wastes that are reported (trends in hazardous waste and non-hazardous waste) and data on waste landfilled under different tax rates to understand the benefits of a Waste Tracking service in reducing misclassification of waste.

- **The impact of Waste Tracking on legitimate businesses -** We are interested in the impact on legitimate businesses, specifically how much additional tonnage of waste they handle following the implementation of the reform, the number of new businesses joining the market, the extent of time savings incurred as a result of the policy, and any additional cost burdens that operators may have incurred.
- **Diversion of materials away from landfill/incineration and the improvement in the supply of critical raw materials –** We will review the flows of material that end up in landfill or incineration and that are sent for recycling or reuse following the implementation of Waste Tracking, and compare this to historical data.
- **Efficiency savings for regulators –** We will engage with the regulators to understand the extent to which they have benefited from efficiency savings as a result of holding waste data digitally (and in a central system for option 3).

The PIR is likely to consider the following questions:

- Outcomes: What difference (if any) did the measures make?
- Mechanisms, Contexts and Attribution: Why did observed changes occur?
- How were the activities delivered, and what can we learn?
- Economic evaluation: Did the benefits justify the costs?