

Rethinking Waste Crime



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Supported by:

Written by:

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About this Report

This report was commissioned by the Environmental Services Association and the Environmental Services Association Education Trust and supported by the 'Right Waste, Right Place' campaign.

About the Environmental Services Association

The Environmental Services Association (ESA) is the trade association representing the UK's resource and waste management industry. ESA's work helps enable our members to turn Britain's waste into valuable resources whilst protecting the environment. ESA engages with all levels of government, regulators and the public to help deliver a more sustainable waste and resource management solution for the UK.

About the Environmental Services Association Education Trust

ESAET is a charity set up in 2007 to commission research and promote education across society to better the environment. Registered Charity Number: 1118486.

About Eunomia

Established in 2001, Eunomia Research & Consulting Ltd ('Eunomia') is an independent environmental consultancy dedicated to helping our clients to achieve better environmental and commercial outcomes.

Eunomia's expertise in analysing waste crime has formed a key part of our wider waste management and policy service provision. Our experience is unparalleled, having undertaken research for the Environment Agency involving not only the analysis of the costs of waste crime, but also the valuation of its social and

environmental impacts. Eunomia has also carried out a detailed review of historic waste crime data dating back to 2007, to analyse the effectiveness of various enforcement interventions on behalf of the Environment Agency.

More recently Eunomia was commissioned by the Environmental Services Association Education Trust (ESAET) to assess the impact of illegal waste activity and develop recommendations for a joint approach to tackling it. The report, "Waste Crime: Tackling Britain's Dirty Secret", was able to provide an aggregated estimate of the cost of waste crime in the UK for the first time.

Eunomia has been supported in the development of this report by two sub-contractors; John Galvin MBE and Mat Crocker. John Galvin is an Independent Waste Regulation Specialist and experienced former waste regulator; he was the Defra policy lead on waste regulation and crime and the principal architect of the 2015 Defra and Welsh Government consultation on measures to tackle waste crime. Mat Crocker is an independent consultant specialising in waste policy and regulation. He was formerly Deputy Director for Waste and Illegals for the Environment Agency.

About 'Right Waste, Right Place'

The campaign raising awareness of waste 'Duty of Care' requirements. Providing practical information to help businesses comply and cut off the supply of waste to criminals.
www.rightwasterightplace.com

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Disclaimer

Eunomia Research & Consulting has taken due care in the preparation of this report to ensure that all facts and analysis presented are as accurate as possible within the scope of the project. However no guarantee is provided in respect of the information presented, and Eunomia Research & Consulting is not responsible for decisions or actions taken on the basis of the content of this report.

Foreword

Since ESAET published “Waste Crime: Britain’s Dirty Secret” in 2014 there has been a renewed government focus on waste crime. That report highlighted the significant return on investment that the public can gain from putting in place resources to combat illegal activity in the waste sector.

HM Treasury agreed to commit extra funding to the Environment Agency to address waste crime. In the 2015 budget it was announced that there would be a one off increase in funding of £4.2 million, whilst the 2015 autumn statement allocated an extra £23 million to the Environment Agency to be spread over the following five years. Furthermore, additional funding will be made available to HMRC over the next five years to increase compliance activity across the waste sector. This was obviously hugely welcomed by the industry which has suffered from a loss of legitimate business as criminals exploited a combination of large potential gains (driven by rises in Landfill Tax) with a low probability of being caught and weak penalties.

At the same time, Defra has put in place initiatives to increase the Environment Agency’s ability to deal with some of the most egregious cases of criminal activity.

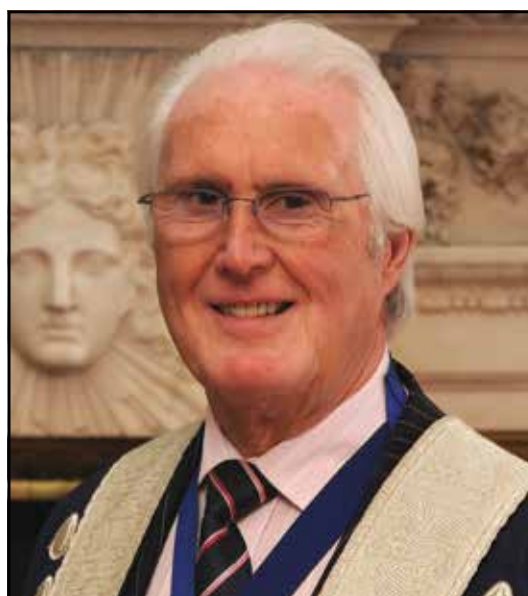
But despite these efforts, waste crime is more entrenched than ever. We have poured more resources into the same old institutions, structures and processes but to little avail. We need a different approach. One which targets the underlying causes of crime in our sector and which roots out the prevailing culture which allows waste crime to flourish.

We need to do more to stop criminals from entering our sector in the first place. This report highlights the weaknesses in the current regime whereby it is simply too easy for illegitimate waste carriers to obtain a registration. Secondly, we need to stop criminals from getting their hands on waste streams. This requires much stronger application of duty of care legislation whereby waste producers and brokers are held responsible for their waste which ends up dumped in illegal sites. And thirdly we need to stop that criminal activity which is already taking place much sooner. Defra has moved in this direction but more could still be done.

Waste crime blights local communities, harms the environment, and undermines investment in legitimate businesses. Once and for all, it must be stopped.



Jacob Hayler (ESA Executive Director)



Roger Hewitt (ESAET Trustee)

Executive Summary

The Problem of Waste Crime

Waste crime remains an enormously serious issue. It undermines investment, growth and jobs within the waste and resources industry and threatens our natural environment. Awareness of illegal activity in the sector is increasing. As it does, slowly but surely, the so called 'dirty secret' is being exposed.

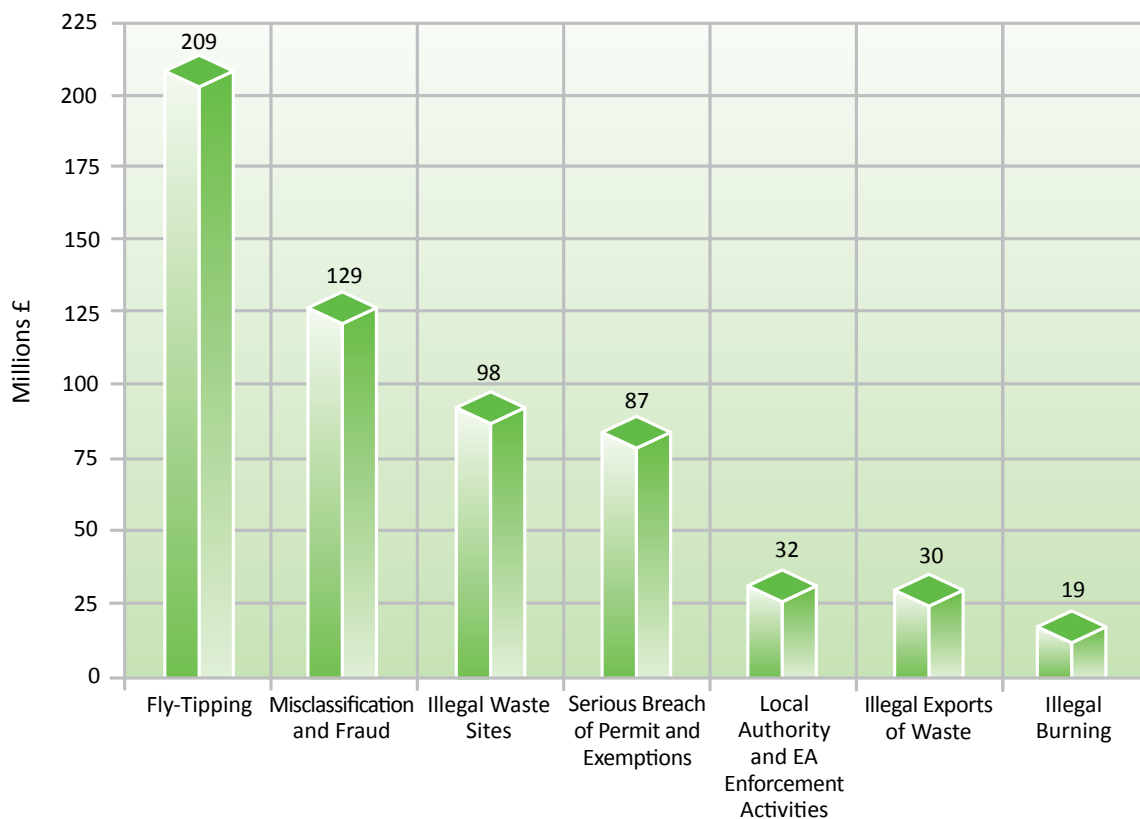
In plain sight, we are experiencing a systematic failure in the waste management sector. The waste and resources industry is unusual in that its very existence relies heavily upon adherence to, and effective enforcement of, rules and regulations. Since the mid-1990s, interventions in the market, such as the introduction of Landfill Tax, have made simply disposing of waste less economically attractive compared with alternatives, such as preventing waste in the first place, and recycling. Long gone are the days when almost all waste was sent to the local landfill.

But as the laws governing the waste management sector have changed over time, and as taxes have affected the costs of alternative ways of dealing with waste, so the opportunities to avoid costs by breaching the laws, and the gains to be made from avoiding these costs, have increased. Waste crime takes on many forms, generally falling into one of six categories:

- 1) Illegal waste sites (which may operate for a short or a long period);
- 2) Illegal burning of waste;
- 3) Fly-tipping;
- 4) Misclassification and fraud;
- 5) Serious breaches of permit conditions, including the abandonment of waste; and
- 6) Illegal exports of waste.

When quantified, it is estimated that the economic impact of waste crime in England in 2015 was at least £604m. It should be noted that this value does not include all of the impacts that are known to occur.

Figure 1: Estimated Economic Impact of Waste Crime in England (2015)



Considering that, in 2015, the waste management sector was estimated to have generated £6.6 billion in GVA, the economic impacts of crime represent a significant proportion of value added. Unless Government can get a grip of this issue there is a real risk of derailing the Government's long term vision for delivering a more resource efficient and resilient economy.

Causes of Waste Crime

Illegal activities are often secretive by nature, and each incident can involve a wide range of motivations, some unique to each case. An understanding of the causes of waste crime has developed through collaborative research with industry, regulator(s) and Government. Conclusions, however, rarely extend beyond repeating the observation that the primary motivation for waste crime is financial gain and a simplistic diagnosis might point to the Landfill Tax as the primary cause of increased levels of criminal activity. In fact, there are two factors necessary for a crime to occur: reward and opportunity.

Whilst the potential rewards generated by waste crime have increased, this needs to be considered alongside the systemic failures in the way the sector operates, which mean that the risk of detection has remained low. The reasons for this can be grouped as follows:

Legislation and Policy

The waste sector operates under a plethora of legislation and policy. But there are some serious failures in this framework. Regulatory effort remains overwhelmingly focused on sites where waste management operations occur. Critically, other parts of the waste management chain, such as waste carriers and brokers are not subject to this level of regulation.

It is the view of industry that it is too easy for criminals to enter in to the waste management sector. At its simplest level, waste crime can be committed by an individual with just a vehicle, and an uninformed and/or mislead waste producer.

Often regulations in place are poorly enforced. Within some critical components of the sector, such as waste carriers registration and waste exemptions, the regulatory hurdles can be overcome by a few clicks on a computer, with far too few inspections by the regulator. It would

be hard to describe it as an effective regulatory system.

Market Dynamics

Alongside the basic rules and regulations governing the waste sector there are also norms and practices that have steadily developed over time. Some of these can encourage detrimental impacts in the waste sector.

Financial transactions in the waste industry are structured around up front payments made by waste producers to service providers. These payments account for the whole life cost of waste and create opportunities for illegal activity. Having already received payment, a service provider is able to default upon their obligation to perform a service, often without suffering financially.

There are also a number of characteristics inherent to waste management sites that make it difficult to detect illegal activity. They are usually operated in out of the way locations that are less visible to the general public. Such sites will also appeal to those wishing to conduct illegal activities, making it difficult to discern at first sight the difference between legitimate and illegitimate sites.

Operators in the Waste Industry

Understanding the various rules and regulations within the waste sector is an important factor that may help to reduce the occurrence of illegal activity. The test for operator competence is only applied to those who have an environmental permit. There are other areas of the sector where operator competence is assumed and not tested. This includes waste carriers, brokers and dealers who have important duties relating to classifying waste and ensuring that it is sent to authorised sites.

Associated with the move away from landfill, the waste sector has become more fragmented, and the range of treatment options for waste has greatly increased. Greater numbers of organisations and individuals are operating than historically, encouraged by the low barriers to entry in some parts of the industry, notably for brokers, carriers and sites operating under exemptions. This fragmentation has created competition in the market that has benefited producers of waste. But it has also increased the risk of illegal activity occurring due to the complexity of business transactions.

For some operators, competition is fierce, and profit margins are small. This can leave operators with limited reserves, and an inability to manage fluctuations in the market, or to recover from misjudged pricing strategies. Operators that have insufficient financial provision to manage the whole life costs of waste can, in some instances, be incentivised to undertake illegal activity.

The Regulators

The funding of waste regulation and enforcement in the Environment Agency is split into two distinct models: charges levied on operators with permits and grant-in-aid funding provided by Defra. In recent years it has also received a number of “one off” sums from HM Treasury to support its work on waste crime.

Routine inspections for environmental permits are funded via annual subsistence fees paid

by operators. These assess the risk associated with each activity, with charges levied on poorly performing sites set at higher levels than those for better performing sites.

Unfortunately, a large proportion of the regulator’s activity in the waste management sector is not covered by such a system of charges, which prevents costs from being recovered from those who are regulated. For example, the exemptions, waste carriers and waste brokers regimes do not levy annual subsistence fees and there is currently no method for regular inspections to be funded by registration holders. Additionally there is no source of direct funding for Duty of Care inspections of waste producers or carriers, whether by the Environment Agency or local authorities. As grant in aid is falling year on year, this has meant that significant parts of the waste management system are largely unregulated.

Recommendations

Based on the analysis provided in this report, fourteen recommendations have been provided on how waste crime can be tackled more effectively. These have been organised into the following themes:

- Modernising the regulatory regime;
- Improving enforcement efforts;
- Developing secure sources of enforcement funding; and
- Improving cross-regulatory cooperation and raising awareness.

Taken as a whole, these recommendations will reform the waste management system in England, building on the Government’s Waste Crime Action Plan.

Modernising the Regulatory Regime

It is clear that many of the causes of waste crime are related to key failures in the existing rules and regulations, whereby large swathes of activity are not being routinely inspected. It is therefore recommended that the following changes are made:

- Reforming the waste carrier, broker and dealer registration process by raising standards and improving enforcement of illegal activity. This includes the introduction of competency tests to ensure that operators have the necessary expertise to perform their respective tasks.
- Mandate the use of Electronic Waste Transfer Notes to track waste from cradle to grave and reduce the administrative burden placed upon regulators and businesses.
- Reform the waste exemption regime to focus on genuinely low risk activities. This includes placing significantly lower limits on the quantities of waste to be managed under an exemption and properly funded periodic inspections.

Recommendations

Improving Enforcement Efforts

Improvements can also be made to the way the regulators undertake their duties within the existing framework. These include:

- Enforce failures in Duty of Care by waste producers and waste carriers and brokers.
- Apply bans to repeat and serious offenders to make it more difficult for convicted waste criminals to re-enter the sector.
- Increase the timeliness of enforcement interventions by setting a shorter target for stopping illegal activity.
- Enhance understanding of waste market and price dynamics to enable the regulator to react more rapidly to changes in the market.

Developing Secure Sources of Enforcement Funding

In order to make the enforcement regime credible, there is a fundamental need to ensure that regulators are in a position to carry out their enforcement duties. Fees and charges should allow for full cost recovery from all waste management activities, so that inspection can help increase compliance and reduce waste crime. Funding for enforcement activity needs its own funding model, which may reduce over time as higher levels of compliance are achieved. The following recommendations are made to reform the enforcement funding regime.

- Impose landfill tax on illegal waste sites to provide an additional deterrent. This will also provide a stimulus to enforcement bodies such as the Environment Agency and HMRC to tackle some of the most damaging illegal activity.
- Ring-Fence landfill tax revenue for enforcement. The budget should be made available to regulate the whole waste sector, and not just illegal waste sites; this includes failures by waste producers and carriers.

Improving Cross-Regulatory Cooperation and Raising Awareness

Beyond their involvement in direct enforcement, there may also be merit in allocating specific duties to local authorities, engaging with waste producers and improving cross regulatory cooperation. The following recommendations are therefore made:

- Increase resource flexibility and co-ordination to ensure that resources are focused on areas where they are needed most. This also includes the development of a more formal approach to managing the interaction between enforcement bodies.
- Fund awareness campaigns to encourage waste producers to fulfill their legal obligations.
- Place an obligation on local authorities to identify legal operators for managing C&D waste and to provide advice and support on how to manage this waste stream responsibly.
- Place an obligation for local authorities to provide end destination reports and ensure that none of the waste overseen by local authorities is ever sent to poorly performing or illegal sites.

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1.0 Introduction

Waste crime remains an enormously serious issue. It undermines investment, growth and jobs within the waste and resources industry and threatens our natural environment. Awareness of illegal activity in the sector is increasing. As it does, slowly but surely, the so called 'dirty secret' is being exposed.

The waste and resources industry is unusual in that its very existence relies heavily upon adherence to, and effective enforcement of, rules and regulations. Since the mid-1990s, interventions in the market, such as the introduction of Landfill Tax, have made simply disposing of waste less economically attractive when alternatives, such as recycling, exist. Long gone are the days when almost all waste would be sent to the local landfill.

Resource efficiency has, therefore, increased, with the UK moving away from a make-use-dispose approach towards a more circular economy.

Recovering value from waste, whether it be in the form of preparing for reuse, recycling or energy recovery, has not only provided numerous environmental benefits, but has also led to the value of the waste industry expanding, at a pace that has exceeded growth in the UK economy as a whole. In 2015, the sector was estimated to have generated £6.6 billion in GVA, supporting over 130,000 jobs.¹

The Government does now recognise the impact of waste crime and has introduced a number of measures aimed at eradicating it: additional funding and resources have been allocated to enforcement, efforts have been made to improve intelligence sharing and, through improved sentencing guidelines, far harsher sentences are now being handed down to criminals who operate in the sector. For example in July 2016 the longest ever custodial sentence for waste crime was handed down when an operator was jailed for seven and a half years.²



(c) ESA

¹ Department for Environment Food and Rural Affairs (2017) *Digest of Waste and Resource Statistics 2017*, March 2017, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/601470/Digest_of_Waste_and_Resource_Statistics__2017.pdf

² Environment Agency (2016) *Leeds businessman receives record jail sentence over £2.2m recycling fraud*, <https://www.gov.uk/government/news/leeds-businessman-receives-record-jail-sentence-over-22m-recycling-fraud>

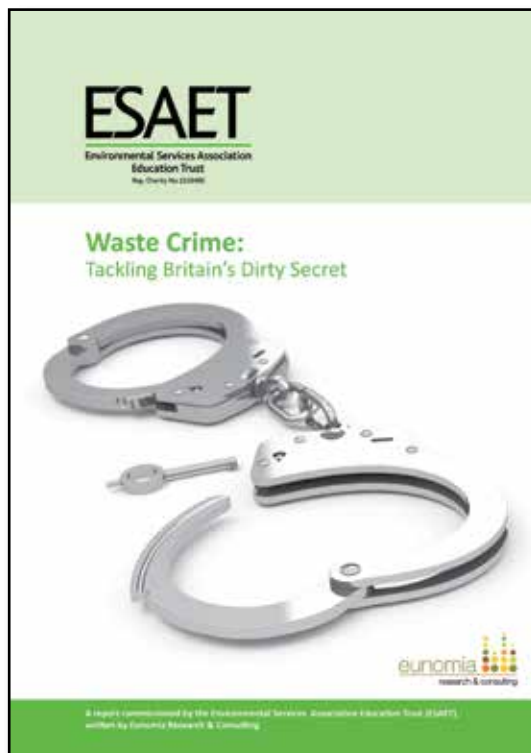
But whilst our awareness of waste crime has increased, our ability to combat it has not kept pace and the increased gains from illegal activity are attracting criminals. As more resources are directed towards it, more criminal activity is identified – the system is failing to prevent crime.

Indeed, the chief executive of the Environment Agency recently described the waste sector as ‘the new narcotics’:

“ *It feels to me like drugs felt in the 1980s: the system hadn’t quite woken up to the enormity of what was going on and was racing to catch up.*³ ”

The Need for this Research

The economic argument for providing resources to the Environment Agency was made in the 2014 report *Waste Crime: Britain’s Dirty Secret*⁴, and resulted in Government providing substantial additional funding. Illegal activity nevertheless remains stubbornly embedded within the waste and resources sector. Many in the sector are therefore asking the fundamental question: **Why do we have waste crime, and what can we do to stop it?**



A simplistic diagnosis might point to the Landfill Tax as the primary cause of increased levels of criminal activity. But as we seek to demonstrate in this report, the causes are more complex and nuanced. The Landfill Tax has provided an incentive that has promoted recycling and waste prevention, and deterred the landfilling of waste material, enabling the waste and resources sector to grow and develop. Since its introduction in 1997, the rate of tax has risen steadily and, in recent years, substantially. This has increased the financial reward for criminal behaviour; but there are fundamental flaws in the regulatory framework that allow waste criminals to exploit the system for personal gain.

To this end, this report aims to provide:

- 1) **An up-to-date valuation of the economic impacts of waste crime.** Building upon work from *Waste Crime: Tackling Britain’s Dirty Secret*, we restate the economic case for cracking down on waste crime. The more up-to-date valuation incorporates new insights into the prevalence of waste crime, revealed by increased government reporting.
- 2) **A detailed diagnosis of the causes of waste crime.** To date there have been very few attempts to consider the root causes of waste crime, leaving the regulators to fight it somewhat in the dark. Identifying the possible causes of different waste crimes will have a number of benefits, including enabling the development of a portfolio of targeted solutions.
- 3) **Recommendations for Government to tackle waste crime.** Ambitious recommendations are put forward, aimed at removing criminal activity from the waste and resources sector. These include suggestions regarding how regulators can improve their effectiveness, and an examination of how their efforts in this field could be funded.

³ <https://www.theguardian.com/environment/2016/sep/22/ea-chief-waste-is-the-new-narcotics>

⁴ Eunomia Research & Consulting (2014) *Waste Crime: Tackling Britain’s Dirty Secret*, Report for ESA Education Trust, April 2014, <http://www.eunomia.co.uk/reports-tools/waste-crime-tackling-britains-dirty-secret/>

1.1 Scope of the Report

Waste crime comes in many forms operating at many scales. This report is focused on the most serious waste crimes, such as illegal waste sites and the deliberate misclassification of waste to avoid taxes, which have the most significant impact upon the growth of the waste industry. It does not seek to tackle widespread, but more minor criminal activity (e.g. small scale fly-tipping and minor permit breaches), whose causes, effects and perpetrators may often be quite different from those associated with more major criminal activity. A more comprehensive definition of what constitutes a waste crime is presented in Section 2.0.

Waste and resources are a devolved matter, with increasingly different approaches adopted by the governments of England, Wales, Scotland and Northern Ireland. The explicit focus of this report is on England only, as there is a need to focus on where waste crime has the largest impact. That being said, many of the findings contained within this report may also be applicable to other areas of the United Kingdom and to EU Member States more widely.

1.2 Methodology

This report is based on a number of research methods deployed during late 2016 and 2017. These include:

- **Telephone interviews with leading ESA members.** These were primarily focussed on exploring views on the causes of waste crime.

- **Telephone interviews with estate agents.** These were focused on understanding the disamenity cost associated with serious breaches of environmental permits.
- **A workshop with ESA members.** This was focussed on examining the causes of waste crime and the consideration of appropriate recommendations.
- **Discussions with the Environment Agency and officials from DEFRA.** These were focused on current approaches to tackling waste crime, and included wider discussions of the issue.
- **Analysis of data on waste crime gathered by the Environment Agency.**

1.3 Structure of the Report

This report is structured as follows:

- Section 2.0 considers what waste crime is, and outlines the key types of the waste crime discussed in the report;
- Section 3.0 quantifies the economic impacts of waste crime in England;
- Section 4.0 provides an explanation of the possible causes of waste crime; and
- Section 5.0 provides a number of recommendations to tackle waste crime.

2.0 What is Waste Crime?

Waste crime is a somewhat all-encompassing term. In its most literal sense, a waste crime might include any activity that transgresses the laws governing the management of waste, by any organisation or person. For the purpose of this report, a refined narrower definition is used, focussing on the types of waste crime with the most severe economic, social and environmental impacts.

As the laws governing the waste management sector have changed over time, the range of opportunities to avoid costs by breaching the law have increased. This co-evolutionary process means that an understanding of why waste crime has become embedded within the sector can only be obtained alongside an understanding of how and why regulation has developed into its current form.

2.1 The Development of Waste Legislation and Regulation

The rules and regulations that govern the waste sector are a product of decades of iterative changes. Motivated by various objectives, they have evolved to serve multiple functions, such as:

- preventing environmental harm (e.g. by setting standards for the management of landfill sites);
- shaping behaviour within the sector (e.g. the waste hierarchy, which requires environmentally preferable approaches to waste management to be prioritised); and
- creating and shaping the market for businesses to operate in (e.g. the registering of waste carriers and brokers).

The following sub-sections explore some of these roles and their evolution in more detail.

2.1.1 The Birth of a Strategic Approach to Waste Management

Laws governing the management of waste have a surprisingly long history, dating back to the reign of Richard II, with the Removal of Refuse on Pain of Forfeits Act 1388.⁵ Most contemporary waste legislation, though, has its roots in the 1970s.



(c) Environment Agency

⁵ R. G. P. Hawkins, H. S. Shaw (2004) *The Practical Guide to Waste Management Law*,

The focus at that time was primarily on establishing controlled landfilling as a means of reducing uncontrolled dumping and better managing the disposal of waste. Hazardous waste was a particular area of concern, prompted by a number of high profile incidents. Of particular note was the public uproar that followed the dumping of one and a half tonnes of cyanide at a site regularly used as a children's play area in Nuneaton in 1972, with the landmark Deposit of Poisonous Waste Act 1972 rushed through in response.⁶

The Control of Pollution Act 1974 was the first attempt to take a more strategic approach to environmental management.⁷ It provided a framework for addressing waste disposal by introducing licence requirements for waste management facilities, backed by regulatory controls.

2.1.2 The Growth of 'Command and Control' Approaches to Waste Management

In the 1980s it came apparent that the Control of Pollution Act wasn't working. It was criticised for its narrow scope, which targeted only waste disposal, rather than waste management more broadly. Focus turned to regulation through a 'command and control' approach. Here, the 'command' related to a required standard or process, whilst monitoring and enforcement provided the 'control'. For example, stringent rules and regulations were introduced to reduce harmful emissions from incinerators and landfill sites, and to reduce the environmental impacts of leachate, signalling a move away from the 'disperse and dilute' approach towards 'concentrate and contain'.

The Environmental Protection Act 1990⁸ was seen as the culmination of these efforts. It established the concept of integrated pollution control (IPC),

whereby waste was managed in a manner that minimised its environmental impacts. The act enshrined the 'polluter pays' principle, introducing a 'duty of care' on importers, producers, carriers, keepers, treaters and disposers of waste. It also established licensing and permitting, with local authorities playing the role of regulator until the Environment Agency took over the role upon its creation in 1996.⁹

2.1.3 The Drive to Move Waste Away from Landfill

The UK may first have received the epithet 'the dirty man of Europe' for its obstructive role in the development of the EU's 1988 Large Combustion Plant Directive¹⁰, but it had been earned through a long and undistinguished record on environment issues.¹¹ This included an almost complete reliance on landfill as a means of managing waste.

The 1991 Waste Framework Directive (1991/156/EEC)¹² encouraged member states to develop recycling and recovery techniques, so that by the end of the 1990s the Landfill Directive (1999/31/EC)¹³ was able to set targets for the diversion of biodegradable municipal solid waste from landfill, and during the 2000s, EU Directives introduced recycling and reuse targets for municipal waste, construction and demolition waste, end-of-life vehicles, waste electrical and electronic equipment, batteries and packaging.

These binding obligations have provided a major incentive for the UK to clean up its act. As awareness and understanding of the wider environmental issues associated with waste management grew, policies emerged that were increasingly geared towards moving waste higher up the waste hierarchy.

⁶ HM Government (1972) *Deposit of Poisonous Waste Act 1972*, 1972, <http://www.legislation.gov.uk/ukpga/1972/21/contents/enacted>

⁷ HM Government (1974) *Control of Pollution Act 1974*, 1974, <http://www.legislation.gov.uk/ukpga/1974/40/contents>

⁸ HM Government (1990) *Environmental Protection Act 1990*

⁹ HM Government (1995) *Environment Act 1995*, 1995, <http://www.legislation.gov.uk/ukpga/1995/25/contents>

¹⁰ The Council of the European Communities (1988) *Council Directive 88/609/EEC of 24 November 1988 on the limitation of emissions of certain pollutants into the air from large combustion plants*, 1988, <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31988L0609>

¹¹ Porritt, J. (1989) The United Kingdom: The Dirty Man of Europe?, *RSA Journal*, Vol.137, No.5396, pp.488–500

¹² The Council of the European Communities *Council Directive 91/156/EEC of 18 March 1991 amending Directive 75/442/EEC on waste*, <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31991L0156>

¹³ (1999) Council Directive 1999/31/EC of 26 April 1999 on the Landfill of Waste (OJ L 182/1 of 16.7.1999)

These policies differed significantly from the 'rules-based' system that had preceded them. The new 'principles-based' regulations included market-based instruments and prescribed targets. It was argued that they were less complex and cheaper to enforce, and would promote innovation within the waste industry.

The Landfill Tax, introduced in 1996¹⁴, has been perhaps the most influential of these instruments. The standard rate, set for active wastes, was initially set at £7.00 per tonne. Thanks to the introduction of an "escalator", by April 2017 it had risen to £86.10 per tonne.¹⁵ Increasing the cost of landfill has made recycling and energy recovery economically preferable.

2.2 Regulatory Systems

The permitting and compliance systems in use today bear little outward resemblance to those established in the 1990s. However, their fundamental composition (in terms of who and what is regulated) remains relatively unchanged: regulation is focused on the 'cradle to grave' management of waste and encompasses carriers, keepers, treaters and disposers of waste.

The regulatory system deployed for the waste sector comprises two main features: a permitting and registration system for sites carrying out waste management activities and a registration system for waste carriage and brokerage. These are discussed below.

2.2.1 Site-based Permitting

Until recently, the environmental permitting and compliance systems (e.g. waste management licences, pollution prevention and control permits) operated independently of one another.^{16, 17}

Since the coming into force of the 2007 Environmental Permitting Regulations, there have been various amending instruments, including, for example, provisions to strengthen powers for regulators to tackle illegal operators. The regulations aim to ensure that risk to the environment and human health are built in to the permitting system. Individuals or businesses undertaking waste activities can meet the requirements of the regulations using one of the following:

- an **'exemption'** – this is for low risk activities. Organisations and individuals would not need a permit for the activity, but must register the exemption – in most cases with the Environment Agency. Such registrations commonly last for three years.
- a **'standard rules permit'** – this is for medium risk activities. Such permits include a set of fixed rules for commonly occurring activities. This permit applies for an indefinite period, until transferred or revoked.
- a **'bespoke permit'** – this is for the highest risk activities. These permits are tailored to organisations and individuals activities. This permit applies for an indefinite period, until transferred or revoked.

2.2.2 Waste Carriers Registration

Alongside the permitting system, there is also a system for carriers, brokers and dealers of waste which has been largely unchanged since its introduction in the early 1990s. Carriers, brokers and dealers are required to register with the Environment Agency (previously local authorities), with the registration type (upper or lower tier) dependent upon the type of waste that they deal with. Each registration lasts for three years.

¹⁴ HM Government (1996) *The Landfill Tax Regulations 1996*, 1996, <http://legislation.data.gov.uk/cy/ukxi/1996/1527/made/data.htm?wrap=true>

¹⁵ HM Government (2016) *Finance Act 2016*, 2016, <http://www.legislation.gov.uk/ukpga/2016/24/contents/enacted>

¹⁶ HM Government (2007) *The Environmental Permitting (England and Wales) Regulations 2007*, 2007, <http://www.legislation.gov.uk/ukxi/2007/3538/schedule/15/paragraph/1/made>

¹⁷ HM Government (2010) *The Environmental Permitting (England and Wales) Regulations 2010*, 2010, <http://www.legislation.gov.uk/ukdsi/2010/9780111491423/contents>

2.3 Types of Waste Crime

These rules shape the UK's waste system: who may transport waste, who may receive it, and how sites that receive waste must be managed. Waste crime occurs when these rules are breached, and can therefore take many forms. These broadly fall into six categories:

- 1) Illegal waste sites (which may operate for a short or a long period);
- 2) Illegal burning of waste;
- 3) Fly-tipping;
- 4) Misclassification and fraud;
- 5) Serious breaches of permit conditions, including the abandonment of waste; and
- 6) Illegal exports of waste.

Each type is summarised in the following sub-sections.

2.3.1 Illegal Waste Sites

Sites where waste is managed without an environmental permit or registered exemption in place are illegal. Without the necessary controls to manage waste in a safe manner, they have the potential to cause damage to the environment and human health. By tonnage, illegal waste sites are most commonly engaged in receiving construction and demolition waste, but a wide variety of wastes may be handled. Sites can range from large landfill-type operations through to the storage of tyres in warehouses or sheds. An example is given in Box 2-1.

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. Furthermore, they divert waste from legitimate businesses, depriving them of turnover and deny them the ability to treat waste higher up the waste hierarchy.

Box 2-1: Illegal Waste Site Case Study

In March 2016, Sam Phelps pleaded guilty to operating two waste sites in Gloucestershire without the necessary environmental permits. The company that he ran, XP Wood Recycling, received and shredded waste wood at a site in Pilning, before transferring it to a second site in Sharpness Docks. Stockpiling waste wood poses a major fire risk due to the heat generated as it decomposes, whilst some waste woods contain harmful oils and preservatives.

When Environment Agency officers visited the site at Pilning, which was located only 100 meters from the nearest house, they found a waste wood pile totalling

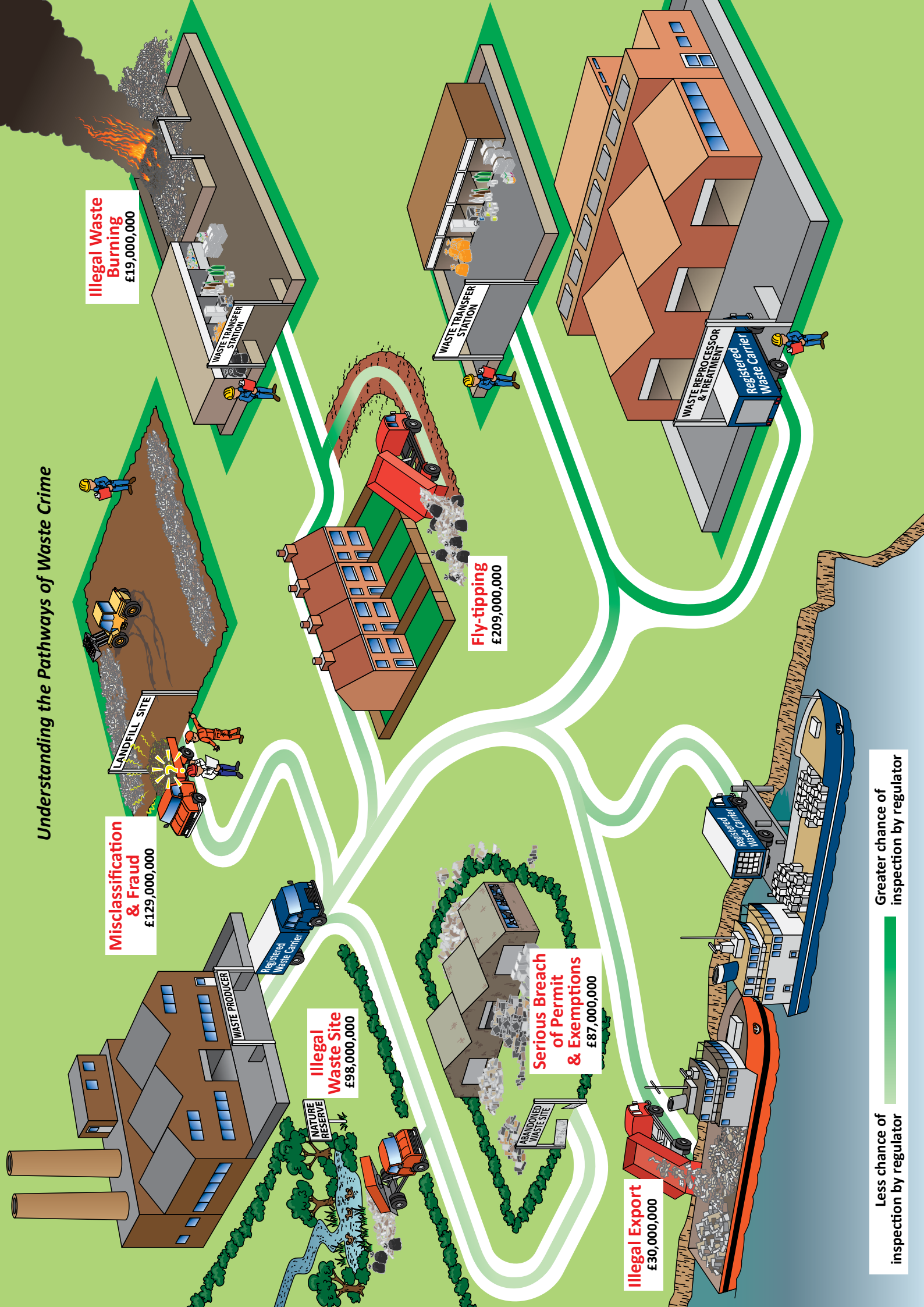
an estimated 3,500-4,000 tonnes, far exceeding the amount eligible to be stored under the registered exemption. The same was true of shredded waste wood at the Sharpness Docks site, which not only posed a fire risk to the nearby residential area, but also had the potential to pollute the Seven Estuary through water run-off.

By not obtaining the necessary permits, Mr Phelps avoided £13,489 in permitting fees, and is estimated to have made over £40,000 profit through his operations. He incurred a £400 fine for each offence, was ordered to pay an £8,000 contribution to cover the costs of the investigation, and had to pay a victim surcharge of £40.

Source: Environment Agency (2016)¹⁸

¹⁸ Environment Agency (2016) *Man handed £8800 penalty for operating illegal waste sites in Gloucestershire*, <https://www.gov.uk/government/news/man-handed-8800-penalty-for-operating-illegal-waste-sites-in-gloucestershire>

Understanding the Pathways of Waste Crime



Data on the prevalence of illegal waste sites are routinely collected by the Environment Agency. The latest update was provided in June 2016, relating to incidents between 1st January 2013 and 31st December 2015. Over this period, an average of 100 new illegal waste sites were identified in England each month.¹⁹

As of June 2016, it was estimated that over one and a half million tonnes of waste was held in known active illegal waste sites in England. This

is shown in Table 2-1. However, this is likely to be a significant underestimate. It relates only to *known* sites, and, as with many types of crime, the amount of activity identified is linked to the amount of resource directed towards finding it. Increased efforts by the Environment Agency have tended to reveal additional sites, and there is a perception that only the surface is being scratched. It is considered highly likely that a substantial number of illegal waste sites remain undiscovered.

Table 2-1: Illegal waste sites in England (2015)

Primary Status	Secondary Status	Number	Estimated Quantity (tonnes)
Active	Identified between 1/1/2015 and 31/12/2015 and still active	244	360,000
	Identified prior to 1/1/2015 and still active	111	690,000
Stopped	Stopped between 1/1/2015 and 2/6/2016	605	550,000
Brought in to Permitting or Exemption Registration	Approved between 1/1/2015 and 2/6/2016	35	20,000
TOTAL		995	1,620,000

Source: Adapted from Environment Agency (2016)²⁰

Illegal waste sites are often located out of plain sight, making them hard to detect. This difficulty is exacerbated by a general lack of awareness of waste regulation within the population – few people could readily differentiate a legal site from an illegal one. Waste professionals are, therefore, more likely than the general public to report illegal sites.

2.3.2 Illegal Burning of Waste

The uncontrolled burning of waste, whether deliberate or accidental, is one of the most visible illegal waste activities. Such burning often occurs in oxygen-poor, low temperature conditions, and emissions are not monitored or controlled. Under these circumstances, significant quantities of harmful chemicals can be released – and there are

recent examples of such fires involving thousands of tonnes of waste, and lasting for several weeks. Waste fires therefore impose a significant risk to public health and the environment.

Whilst accidents can occur, there is a growing recognition that some waste fires are started deliberately. The economics of running some waste sites can incentivise storing excessive quantities of waste. This can occur where operators are paid up front for the waste they receive, and only later incur the disposal and treatment costs; or where material is received for recycling, and insured at a valuation higher than its real market value. In such circumstances, causing or allowing waste to catch fire can be financially advantageous.

¹⁹ Environment Agency (2016) *Waste Investigations Report, 2016*, <https://data.gov.uk/dataset/waste-investigations-report>

²⁰ Ibid

Significant efforts have been directed towards preventing accidental fires and minimising their impact. New or significantly revised environmental permits now require a fire prevention plan to be in place, alongside suitable equipment and measures. The WISH (Waste Industry Safety and Health) forum has also conducted extensive fire trials and has developed best practice guidance on managing fire risk. Industry groups are developing bespoke guidance on fire prevention at wood waste sites, and for sites handling refuse derived fuel (RDF). Some insurance companies require additional measures to be introduced. While fire prevention is important, and the impacts of a fire on a legitimate waste business can be catastrophic, compliance with fire prevention rules comes at a significant cost, which illegal operators do not incur.

According to data provided by the Environment Agency, a total of 366 burning incidents were classed as active or had been stopped in 2015.²¹ The statistics are presented in this way because illegal burning can occur at both regulated and unregulated sites. Although these figures are not broken down further in the data, historically around 80% of incidents occur at regulated sites. The open burning of waste is often a breach of a

site's permit, and undertaking this deliberately will constitute a criminal offence.

2.3.3 Fly-tipping

Fly-tipping is a wide-ranging offence, defined as *'the illegal disposal of household, industrial, commercial or other 'controlled' waste without a waste management licence.'*²² In many instances it is an opportunistic, one-off occurrence, with perpetrators seeking to avoid waste treatment or disposal costs. But in aggregate, such activities cause significant economic, social and environmental harm.

Local authorities deal with fly-tipping on public land, unless the dumped waste exceeds 20 tonnes, contains significant amounts of hazardous material or is known to be linked to organised crime. In these cases the Environment Agency takes the lead role. The emphasis of this report is predominantly focussed on tackling the latter types of incidents; however, this is not to disregard the multi-million pound cost to councils of dealing with smaller incidents each year. Accordingly the costs to local authorities is also included in this assessment.

Box 2-2: Fly-tipping Case Study

Fly-tipping and the illegal dumping of waste is perpetrated by both individuals and organisations, and is one of the most publicly visible waste crimes.

This public visibility was ultimately the downfall of Bernard Molloy of Shepton Beauchamp, who was reported to the police by members of the public for burning and fly-tipping waste, including rubble and kitchen appliances. These reports were also supported by video evidence.

Molloy pleaded guilty to illegally depositing controlled waste including rubble, timber,

electrical items and various mixed and commercial waste in a field. He was also convicted of illegally burning waste, and of carrying waste without the required license.

Molloy was given the first ever criminal behaviour order for an environmental crime, which prevented him from being employed to collect, transport or deposit waste. He was also ordered to pay £2,500 in costs, and given 150 hours of community service.

Source: Environment Agency (2016)²³

21 Environment Agency (2016) *Waste Investigations Report*, 2016, <https://data.gov.uk/dataset/waste-investigations-report>

22 House of Commons (2016) *Briefing Paper: Fly-tipping - The Illegal Dumping of Waste*, May 2016

23 Environment Agency (2016) *Somerset builder prosecuted for dumping and burning waste near Crewkerne*, <https://www.gov.uk/government/news/somerset-builder-prosecuted-for-dumping-and-burning-waste-near-crewkerne>

Based on the latest figures provided by the Environment Agency, 126 serious incidents of fly-tipping were reported in 2015.²⁴ Over 15% of these involved hazardous waste.

In 2015/16, local authorities dealt with 936,000 fly-tipping incidents. Whilst the quantity of waste in each incident is smaller than those which are dealt with by the Environment Agency, this number of incidents represents a significant level of illegal activity.²⁵

These figures, however, are a significant underestimate of the scale of fly-tipping in England as they do not capture waste which is fly-tipped on privately owned land. Private landowners, especially in rural areas, are also being blighted by incidents of fly-tipping, causing visual disamenity and economic damage. This is further discussed in Section 3.3.

2.3.4 Misclassification and Fraud

Proper record keeping is essential within the waste system, but there can be substantial financial rewards to falsifying paperwork and records. Some criminals have sought to defraud producer

responsibility schemes, and claim payments for non-existent recycling (see Box 2-3). Others have sought to claim that material has attained end of waste status when in fact it has not. However, cases of misclassification of waste appear to be the most prevalent.

Misclassification of waste can occur at any point in the waste management chain. It typically occurs when organisations and/or individuals (either accidentally or deliberately) misclassify waste at the point of transfer.

The financial implications of misclassification can be significant. For example, waste classified as 'inactive' is eligible for the lower rate of Landfill Tax, which, at £2.70 per tonne, is substantially lower than the standard rate of tax of £86.10 per tonne. Misclassifying waste to avoid tax is potentially lucrative.

Similarly, if hazardous waste is misclassified as non-hazardous, it will command a far cheaper gate-fee. For example, it has been known for soil contaminated with heavy metals to be misclassified as clean excavated soil.

Box 2-3: Misclassification and Fraud Case Study

In July 2016, Terence Solomon Dugbo was given a record custodial sentence of seven years and six months for falsifying documents that claimed his company, TLC Recycling Ltd, had collected and recycled electrical waste worth £2.2 million.

He falsified the documentation as a means to claim payment from the government-backed Producer Compliance Scheme, in which companies pay for the recycling of old electrical waste, thereby offsetting the production of new equipment.

Recovered documentation reveals the extent of the fraud, which included unrealistic or absurd claims. For example, a single moped was documented as

transferring 991 TVs and 413 fridges in just one trip, whilst some of the vehicles used and the streets and properties from which waste was collected were entirely fabricated.

Following the sentencing an environmental crime officer commented:

"The length of the sentence handed out by the court today demonstrates the seriousness of Dugbo's activities. Hopefully this case and the record sentence will act as a warning to others who commit waste crime that they will be pursued and, if convicted, could face serious punishment."

Source: Environment Agency (2016)²⁶

24 Data.gov.uk, Waste Investigations Report, <https://data.gov.uk/dataset/waste-investigations-report>

25 Department for Environment Food and Rural Affairs (2017) *Fly-tipping statistics for England, 2015/16*, March 2017, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/595773/Flytipping_201516_statistical_release.pdf

26 Environment Agency (2016) *Leeds businessman receives record jail sentence over £2.2m recycling fraud*, <https://www.gov.uk/government/news/leeds-businessman-receives-record-jail-sentence-over-22m-recycling-fraud>

The complexity of the modern waste sector means that the opportunity for misclassification (and fraud) is now greater than ever. Unfortunately, data on the overall level of misclassification within the waste sector are not available. The only formal assessments provided by public bodies include:

- **Misclassified waste at landfill sites.** HMRC estimated a 'landfill tax gap' of £150m (12%) for 2014/15 for the UK – this would equate to £128m in England.²⁷ This is based on an estimate of the quantity of standard rated waste being misclassified as inactive material; and
- **Misclassification of gypsum wastes.** The Environment Agency estimate that between 550,000 and 900,000 tonnes of gypsum are being illegally disposed of in landfills.²⁸

Whilst these provide useful insight in to some examples of misclassification, no attempt has been made to appraise the overall scale of misclassification and fraud within the waste

sector due to the lack of comprehensive evidence gathered by the various regulators.

2.3.5 Illegal Exports of Waste

The Transfrontier Shipment of Waste Regulations 2007 define the procedures, offences and penalties relating to the export of waste from the UK.²⁹ Whilst some wastes can be exported legally for recycling and recovery, including a growing international trade in refuse derived fuel for energy from waste facilities, it is illegal in almost all cases to export untreated waste from the UK for disposal. It is also illegal to export hazardous waste to non-OECD countries.

Illegal exports can be an attractive option for waste criminals, as waste disposal in less developed countries tends to be cheaper due to less stringent environmental regulations. Needless to say, when waste is not managed properly in the country that receives it, this can result in significant environmental damage and harm to human health.

Box 2-4: Illegal exports Case Study

In March 2015, Bakour Limited, a shipping company based in Woking, and its sole director, Adam Bakour, pleaded guilty to attempting to export WEEE to West Africa. The WEEE included a number of hazardous materials, contained within devices such as cathode ray tube televisions and fridge freezers.

The charges were made after the contents of shipping containers, filled with WEEE originating from Bakour limited, were examined at the Environment Agency's inspection yard between October 2011 and August 2013. Mr Bakour claimed

that his company only exported working electrical goods, and blamed his employees' negligence for the contents of the containers.

The Environment Agency subsequently issued an enforcement notice. However, when officers visited the site in September 2013, it was clear that no efforts had been made to ensure compliance. The company was fined £7,950, whilst Adam Bakour was sentenced to 18 months' imprisonment, suspended for two years, and was ordered to pay towards the costs of the investigation.

Source: Environment Agency (2016)³⁰

27 HM Revenue & Customs (2016) *Measuring Tax Gaps 2016 Edition: Tax Gap Estimates for 2014-15*, October 2016, ds/system/uploads/attachment_data/file/561312/HMRC-measuring-tax-gaps-2016.pdf

28 Environment Agency (2011) *An investigation into the disposal and recovery of gypsum waste*, 2011

29 HM Government (2007) *The Transfrontier Shipment of Waste Regulations 2007*, 2007 No. 1711

30 Environment Agency (2015) *Wokingham shipping company and director fined and sentenced for illegal export of waste*

Research by the media and NGOs has repeatedly documented illegal WEEE exports from the UK to a range of destinations, especially Nigeria, Ghana and Pakistan.³¹ In such countries, crude methods, such as burning, are often used to extract valuable materials from WEEE, and harmful chemicals including arsenic, beryllium, cadmium, lead and mercury are present at high levels. This results in adverse health impacts on workers and nearby residents, whilst also having financial implication for legitimate recycling operations, whether in the UK or overseas.

Understanding the scale of illegal waste exports is extremely difficult. Like many of the crimes explored in this report, data are unreliable and incomplete, being based mainly on the crimes that are detected. It is understood that, while inspections of waste shipments have increased significantly over the last three years, they are still far from routinely undertaken. Data from the Environment Agency indicate that 1,388 inspections were undertaken in 2015/16.³² It is unclear what proportion of the overall quantity of exports this represents. Based on this data, however, 16% were found to be irregular with 1% evidenced for enforcement action. If applied to all waste exported from England this would

account for approximately 160,000 tonnes of waste in 2014 (the latest available year of data available); however, since inspections tend to be intelligence-led, this may be an overestimate of the level of illegal exports.

2.3.6 Serious Breach of Permit and Exemption Conditions

Criminal activity is not just limited to those operating outside of the regulatory framework. It can also be perpetrated by individuals or organisations through a breach of an environmental permit or failure to comply with the terms of a registered exemption, sometimes with no regard for its rules. Examples include deliberately accepting too much waste, storing waste in an inappropriate manner or accepting the wrong type of waste. Such breaches can, in some circumstances, pose a significant risk to human health and the environment; for example, where the waste creates a fire hazard or there is a risk of it collapsing.

This report is focussed on those breaches that are often undertaken deliberately. It is not focussed on activities where technical breaches occurred and the operator is committed to remedy any adverse impacts.

Box 2-5: Breach of Permit Conditions Case Study

Birch Skip Hire Limited operated household, commercial and industrial waste transfer stations in Ardwick and Manchester. The company had a history of failing to comply with environmental permit regulations, as they were often found to be storing excessive amounts of waste.

At one site they were found to be storing more than 80 times the permitted amount of waste, totalling an estimated 16,000 tonnes. The company failed to act upon enforcement and suspension notices that demanded the waste be cleared.

The company director, Anthony Cash, pleaded guilty to seven charges in court,

and was subsequently fined £14,000 and ordered to pay £7,000 in costs. The company has subsequently stopped trading.

Following the conviction a member of Environment Agency staff commented:

‘These charges send out a strong message to waste offenders, that environmental crime can lead to serious enforcement action in the criminal courts and where appropriate individual directors of companies holding environmental permits will be held accountable.’

Source: Environment Agency (2016)³³

31 EIA (2011) *System Failure: The UK's harmful trade in electronic waste*. EIA Waste Report, May 2011, http://www.greencustoms.org/docs/EIA_E-waste_report_0511_WEB.pdf

32 Environment Agency (2016) *Waste Investigations Report*, 2016, <https://data.gov.uk/dataset/waste-investigations-report>

33 Environment Agency (2015) *Company Director fined for illegal waste activity in Manchester*, <https://www.gov.uk/government/news/company-director-fined-for-illegal-waste-activity-in-manchester>

Data on breaches of permit conditions are routinely collected by the Environment Agency. Incidents are recorded according to their impact on the environment and people, from category 1 (the most serious) to category 4 (little or no impact) and the level of response needed. Activities which are categorised as 1 or 2 are deemed to be serious pollution incidents.

Activities with permits caused 170 serious pollution incidents in 2015.³⁴ Waste management activities collectively caused 94 of these incidents (55% of the total caused by activities with permits). Unfortunately, data are not broken down by the specific type of waste management activity involved; nor are the nature of the activity and the quantity of waste involved recorded.

Table 2-2: Serious Pollution Incidents at Permitted Sites (2013-2015) in England

Waste Management Activity	3 yearly average of number of incidents	3 yearly average of number of incidents per 100 permits
Landfill	31	1.4
Biowaste use	39	6.0
Metals (ferrous)	1	2.5
Waste Treatment (non-hazardous)	55	1.4
Waste Treatment (metals recycling)	13	0.5
Incineration with energy recovery	0.7	0.5

Source: Adapted from Environment Agency (2016)³⁵

Alongside breaches of permits, it is also possible to breach conditions of waste exemptions. Such breaches include managing too much waste or the wrong types of waste. These types of infringements have the potential to cause significant disamenity or environmental hazard. While exemptions are subject to an inspection regime, they are perceived as a low risk area and therefore not given a high priority. Due to limited resources, few inspections in fact take place, making the overall level of illegal activity being undertaken via exemptions, currently, highly uncertain.

Data provided by the Environment Agency indicate that there are approximately 530,000 registered exemptions across 94,000 sites.³⁶

The majority of these (57%) are associated with the management of agricultural wastes. Less than a third (29%) are registered for a mix of agricultural and non-agricultural wastes. The remaining exemptions (14%) relate to the management of non-agricultural wastes.

Based on an assumption that 5% of exemptions are operating in breach of their conditions, just over 26,400 exemptions could be engaged in illegal activity. It is understood that the Environment Agency has investigated this issue further via a review of some of the highest risk exemptions in 2016, and that Defra is planning on releasing the findings of this work in summer 2017, alongside a consultation with industry.

34 Environment Agency (2016) *Waste Investigations Report*, 2016, <https://data.gov.uk/dataset/waste-investigations-report>

35 Data.gov.uk, *Waste Investigations Report*, <https://data.gov.uk/dataset/waste-investigations-report>

36 Personal communication with the Environment Agency (2017)

3.0 Economic Impact of Waste Crime

Estimating the economic impact of waste crime is incredibly difficult, and the publication of *“Tackling Britain’s Dirty Secret”* in 2014 represented the first attempt to produce an aggregate figure. Based on the best available evidence at the time, the report estimated a economic impact of £568m per year to the UK economy.³⁷

Since then, developments in the waste industry and new insights into waste crime have prompted the need for an updated valuation. This report varies in scope to *“Tackling Britain’s Dirty Secret”* by being focussed on the economic impact of waste crime in England, as opposed to the UK. Primarily this is due to better available evidence in England that enables a more accurate forecast.

Estimating the economic impact of waste crime requires two important sources of information:

- 1) **The overall level of criminal activity.** Many of the illegal activities in the waste sector occur out of plain sight. Thus our knowledge

of illegal activity is unlikely ever to be complete. For the purpose of this report, estimates of the level of criminal activity are based on publicly available data provided primarily by the Environment Agency; and

- 2) **Details of criminal activity.** Details relating to precise activities must be understood so that an effective counterfactual scenario of what would have happened to the waste in absence of the illegal activity can be developed. This includes understanding the type of activity and the quantity of waste involved. Like the estimate for the level of criminal activity, the data used in this assessment is largely based on publicly available data provided by the Environment Agency. In many cases the data is not complete or conclusive and therefore suitable assumptions have been made to fill key gaps. These are outlined in Appendix A.1.0.



(c) Environment Agency

37 Eunomia Research & Consulting (2014) *Waste Crime: Tackling Britain’s Dirty Secret*, Report for ESA Education Trust, April 2014, <http://www.eunomia.co.uk/reports-tools/waste-crime-tackling-britains-dirty-secret/>

3.1 Illegal Waste Sites

Illegal waste sites can impose significant costs. This assessment is based on data regarding illegal waste site activity in the calendar year 2015, which was released in June 2016. So far as possible, the data has been updated to reflect more recent developments; for example, some activities that were under way in 2015 have been stopped as a result of enforcement action taken between the end of 2015 and June 2016.

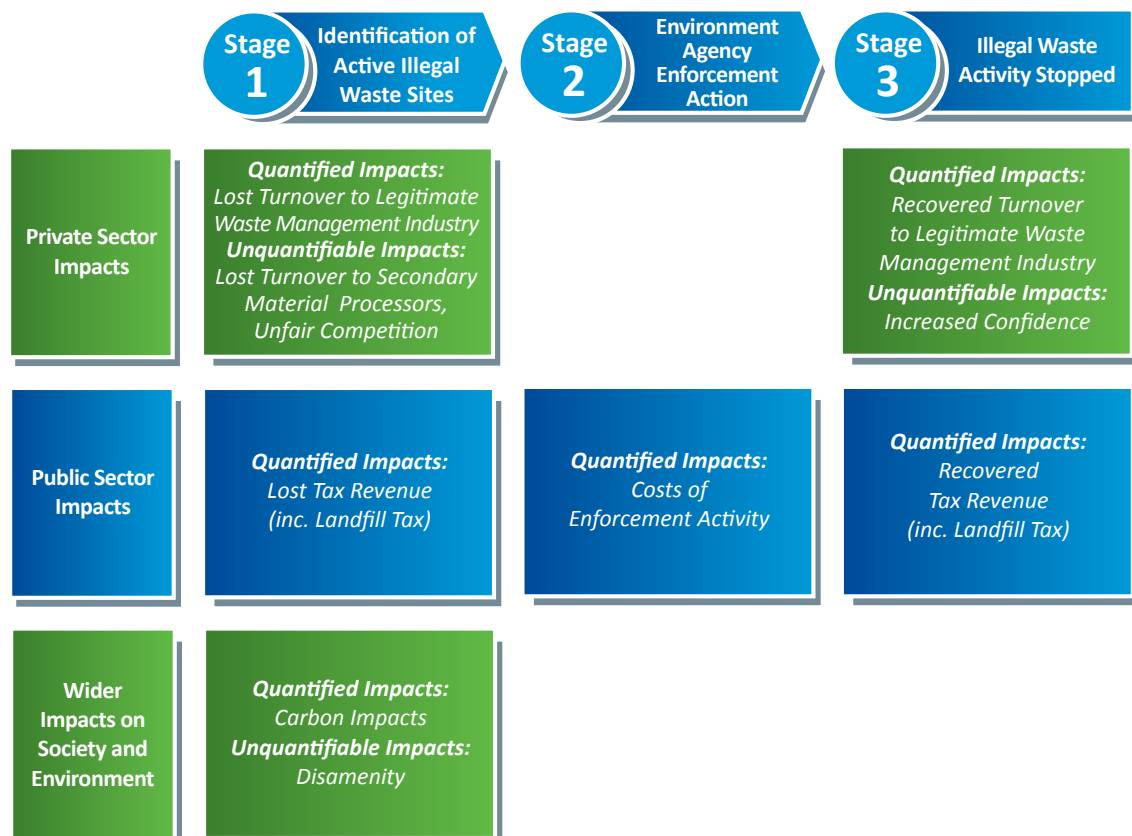
The data includes the following types of illegal waste sites:

- those that emerged in 2015 and were either active or stopped by June 2016; and
- those that emerged prior to 2015, but were still active as of June 2016.

Ideally it would also be useful to include data on sites that were identified prior to 2015, undertook some activity in 2015, but were stopped in 2015. Unfortunately the data released by the Environment Agency does not facilitate identification of these sites and therefore the magnitude of illegal waste sites is likely to be an **underestimate of the level of activity observed in 2015**.

Figure 3-1 provides an overview of some of the key stages and associated impacts of illegal waste sites on the private sector, the public sector and wider society. Each of these stages is discussed in more detail in the following sub-sections alongside key modelling assumptions.

Figure 3-1: Overview of the Economic Impacts of Illegal Waste Sites



Stage 1: Identification of Active Illegal Waste Sites

Active illegal waste sites can impose a range of significant economic impacts.

Illegal sites deprive legitimate operators in the private sector of revenue, whilst also damaging confidence in investment. They can create unfair price competition and lower profits for legitimate operators.

At this stage, for the public sector, lost tax revenue is the largest impact. This is especially true if the waste would otherwise have been sent to landfill. More widely, illegal waste sites can also create significant disamenity for the general public.

Beyond the waste management sector, the disposal of waste in illegal sites reduces the amount of material available to reprocessors.

A lack of secondary materials can mean that additional primary materials are required in manufacturing, construction and other resource-intensive sectors. They can impose costs on public services such as the fire service, planning and environmental health. They can also impact on property values, whether the land or buildings where waste has been left, or neighbouring properties. These wider costs have not been included in this exercise.

An estimate of the economic impacts of illegal waste sites is shown in Table 3-1. The table shows that in 2015 the initial economic impacts was £120m. It should be noted that these figures do not take into account the total economic impact, as some of these figures can be reduced by enforcement action (as identified in the following stages). Appendix A.1.0 details the key assumptions relating to the estimated figures.

Table 3-1: Initial economic impacts of Illegal Waste Sites in England (2015)

Sector	Number of Illegal Waste Sites in Operation	Average Economic Impact per each Active Illegal Waste Site	Total Economic Impact of Active Illegal Waste Sites
Private Sector	995	£87,400	£87,009,800
Public Sector		£20,100	£20,011,600
Wider Society		£13,000	£12,925,300
TOTAL		£120,500	£119,946,600

Note: Figures may not add due to rounding

Stage 2: Environment Agency Enforcement Action

The Environment Agency undertakes a range of enforcement activities ranging from the use of advice and guidance, through to prosecution. Core spending on waste crime was approximately £14.8m in 2015/16.³⁸ Unfortunately no breakdown is provided relating to expenditure on enforcing specific types of illegal activity.

The resources for enforcement activities come principally from grant-in-aid provided by Defra. This funds large parts of the Environment Agency's

work, including high profile concerns such as flood defence. Combating waste crime is just one such priority, within which reducing the overall risk presented by illegal waste sites is only a component.

Stage 3: Illegal Waste Sites Stopped

In "Waste Crime: Tackling Britain's Dirty Secret" the case for investment in enforcement activities was made. That report estimated that, at the margin, for every £1 invested in combating waste crime, as much as £5.60 could be returned.

³⁸ Environment Agency (2016) *Waste Investigations Report*, 2016, <https://data.gov.uk/dataset/waste-investigations-report>

Using data provided by the Environment Agency, however, an assessment of the benefits of stopping illegal waste sites can be made. Where illegal waste sites are stopped and the waste recovered, some of the initial economic impacts can be reduced (e.g. if the criminal subsequently pays for the waste to be cleared by legitimate operators and sent to authorised facilities). For each individual illegal

waste site there are a number of factors which might affect the costs recovered via enforcement action, not least of these being whether the waste from the illegal waste site is cleared (e.g. via the use of a Section 59 Notice³⁹) or left in situ. Based on a set of assumptions detailed in Appendix A.1.0, Table 3-2 summarises the estimate of the economic impacts recovered from the illegal waste sites in 2015.

Table 3-2: Economic Impacts Recovered from Illegal Waste Sites in England (2015)

Sector	Number of Stopped Illegal Waste Sites	Average Economic Impacts Recovered from each Stopped Illegal Waste Site	Total Economic Impacts Recovered from Stopped Illegal Waste Sites
Private Sector	640	-£18,900	-£12,106,700
Public Sector		-£13,700	-£8,795,600
Wider Society		£700	£735,200
TOTAL		-£31,900	-£20,167,100

Note: Figures may not add due to rounding. Negative numbers represent benefits.

Net Impact of Illegal Waste Sites

By combining the figures from each stage, a net estimate of the cost of illegal waste sites can be

produced. This is calculated to be approximately £98 million in 2015, as shown in Table 3-3.

Table 3-3: Net Impact of Illegal Waste Sites in England (2015)

Sector	Number of Illegal Waste Sites in Operation	Net Economic Impact of each Illegal Waste Site	Total Net Economic Impact of Illegal Waste Sites
Private Sector	995	£75,300	£74,903,100
Public Sector ¹		£11,300	£11,216,000
Wider Society		£12,300	£12,190,100
TOTAL		£98,800	£98,309,200

Notes: 1) Excludes the cost of enforcement action. Figures may not add due to rounding.

3.2 Illegal Burning of Waste

Illegal burning of waste can have significant financial implications on a range of economic actors. For the public sector, there are significant costs to both the Fire Service and Environment Agency in managing incidents and preventing harm. Costs are also incurred by the private

sector. Where fires occur at unregulated sites, waste that could have been treated and disposed of in the legitimate sector is destroyed and thus unavailable. Table 3-4 provides an estimate of the key costs associated with illegal burning, with an estimated impact of £19.2 million in 2015. Appendix A.1.0 provides a detailed overview of the key assumptions.

³⁹ Section 59 of the Environmental Protection Act provides powers to the Environment Agency to remove any waste unlawfully deposited.

Table 3-4: Summary of Estimated Impact of Illegal Burning (2015)

Sector	Number of Burning Incidents	Total Economic Impact of Illegal Burning
Private Sector	366	£2,224,100
Public Sector		£16,963,000
Wider Society		Not calculated
TOTAL		£19,187,100

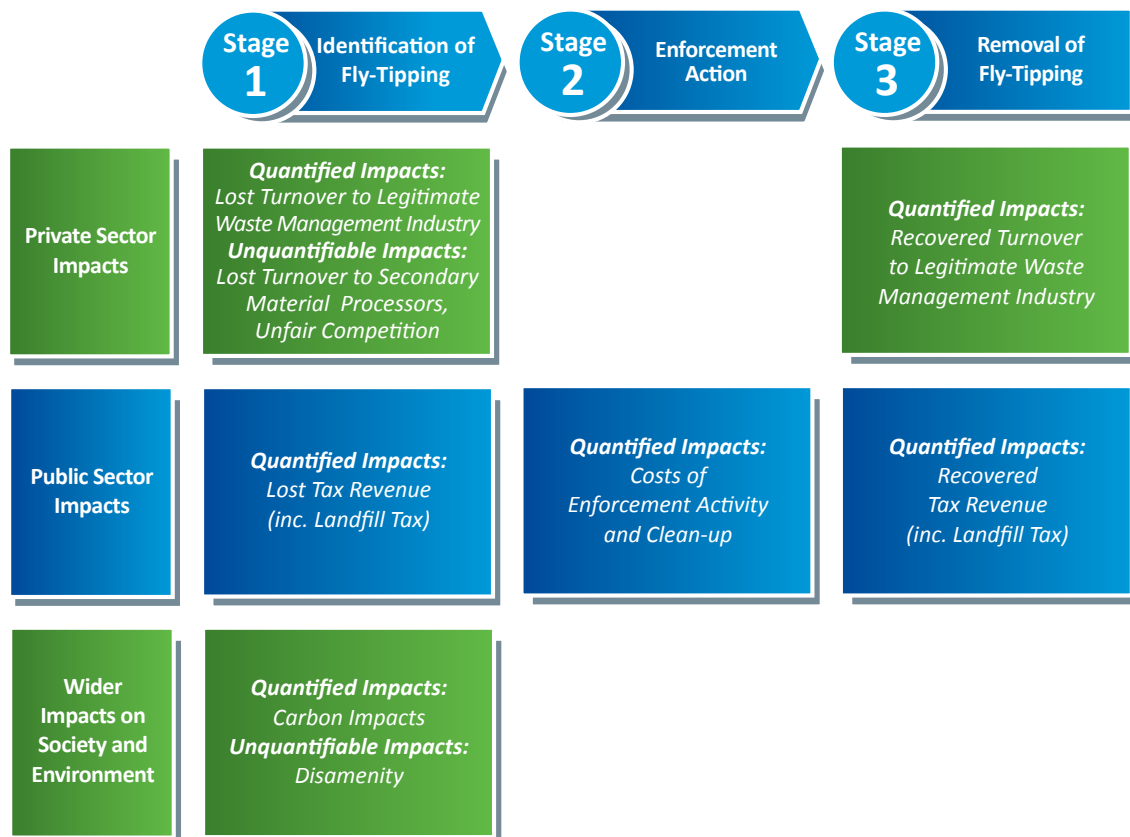
Notes: Figures may not add due to rounding.

3.3 Fly-Tipping

As with illegal waste sites, the economic impacts of fly-tipping will depend on the type of waste involved and the scale of the incident. Based on the approach outlined in Figure 3-2, an overall estimate of the economic impact of fly-tipping managed by the Environment Agency and local authorities can be calculated. The total impact for Environment Agency managed fly-tipping is £274,600. For local authority managed wastes

the estimate is forecast to be significantly higher at £52.1 million. A central assumption is that that all fly-tipped waste managed by the Environment Agency and local authorities is removed and sent to the legitimate waste management sector by public authorities. This significantly reduces the total economic impact on the private sector but imposes additional economic impacts on the public sector. These calculations are based on a series of assumptions detailed in Appendix A.1.0.

Figure 3-2: Overview of the Economic Impact Associated with Fly-Tipping



There are also unquantified costs, for example, waste that is fly-tipped is far more likely to be sent to landfill or other residual waste treatment facilities once it is cleared. Operators involved with managing and treating waste higher up the waste hierarchy can experience significant lost benefits. In addition, there are impacts associated with fly-tipping on private land, which the Country Land and Business Association (CLA) has estimated it costs its members up to £150m per annum to clean up. When calculating the additional impacts on the public sector and wider society, the total cost of fly-tipping on private land is estimated to cost £156.9 million per annum.

3.4 Misclassification and Fraud

Misclassification and fraud are particularly difficult to quantify. As outlined in Section 2.3.4, the prevalence of misclassification is very unclear, and so far only limited evidence has emerged.

Landfill Tax evasion appears to be the aspect of misclassification that has the greatest known financial impact. Waste classified as inactive is eligible for the lower rate of Landfill Tax, which is a substantial saving against standard rate. It is thought that attempts to avoid the tax have been reduced by the introduction of loss on

ignition (LOI) testing, although the overall impact of this measure is unclear. Tax evasion through the misclassification of waste sent to landfill is thought to be a significant source of revenue loss for HMRC, with an estimated 'landfill tax gap' of £150 million (12%) calculated in 2014/15.⁴¹

Other types of misclassification are also believed to exist in the waste sector. The disguising of hazardous waste as non-hazardous waste is perceived as a threat, as is the fraudulent misclassification of waste as 'non-waste', but at present no data is available to support reasonable estimates of their prevalence.

3.5 Illegal Exports of Waste

As outlined in Section 2.3.5, data on the quantity of waste being illegally exported is very limited. A conservative assumption that 2% of all waste exports are being undertaken illegally would mean that approximately 320,000 tonnes of waste is being exported illegally. Had it been treated and disposed of in England, this would have resulted in £30.2 million of revenue to the legitimate waste industry and public sector, as presented in Table 3-6. This is based on a conservative assumption of a relatively low cost of waste management.

Table 3-6: Estimated Impact of Illegal Exports of Waste in England (2015)

Sector	Estimated Tonnage of Illegal Export	Total Economic Impact of Illegal Export
Private Sector	317,725	£11,620,500
Public Sector		£2,628,000
Wider Society		£15,958,500
TOTAL		£30,206,900

Notes: Figures may not add due to rounding.

3.6 Serious Breach of Permit and Exemption Conditions

There is limited data available on the specific nature of serious permit breaches and therefore it is not possible to provide an estimate of the associated economic impact.

Nonetheless, there is value to understanding the disamenity associated with such breaches: in

particular, the impact of serious permit breaches on local house prices. Research was conducted with local estate agents near Orpington, Kent. Orpington was the unfortunate host to a waste transfer station abandoned by Waste4Fuel Ltd. Box 3-1 outlines the impact that such a site can have on local property values.

40 See: <https://www.cla.org.uk/rural-policy-advice/environmental-management/waste/fly-tipping>

41 HM Revenue & Customs (2016) *Measuring Tax Gaps 2016 Edition: Tax Gap Estimates for 2014-15*, October 2016, [ds/system/uploads/attachment_data/file/561312/HMRC-measuring-tax-gaps-2016.pdf](https://data/file/561312/HMRC-measuring-tax-gaps-2016.pdf)

Box 3-1: Orpington – Waste4Fuel

The Kent-based firm Waste4Fuel ran a site in Orpington that severely impacted the lives of local residents. The company collected and sorted waste including tyres, plastics, cardboard, metals and paper for processing into RDF. They had been under scrutiny from authorities for several years due to the storage of thousands of tonnes of waste on the site, which also experienced a large number of fires. The owner failed to comply with orders to install separate areas for new waste and fire breaks and eventually abandoned it.

In September 2016, the London Borough of Bromley bought the site from Waste4Fuel and began removing the waste, estimated to be between 15,000 and 18,000 tonnes. The total cost of acquiring the land and clearing the rubbish was approximately £2.7 million, with the Environment Agency securing much of the funding and the council contributing £300,000.⁴²

The economic impacts associated with sites such as this are not just felt by local government and the regulator. Speaking

with estate agents in Orpington, the impact on property values can be significant. Although estimates varied, some believed that the reduction in average house prices could be around 20 - 25 percent in the immediate area, while others thought that the site would render a property in the area 'unsellable'. Whilst a compliant waste operation would also have some impact on prices, this is exacerbated by the odour and smoke issues associated with poor management practices on the site.



It is possible to provide an estimate for the impacts associated with breaches of registered waste exemptions. Based on a set of assumptions

detailed in Appendix A.1.0, a summary of the total economic impact of breaches of registered exemptions is shown in Table 3-7.

Table 3-7: Estimated Impact of Breaches of Registered Exemptions (2015)

Sector	Estimated Number of Breaches	Total Economic Impact of Exemption Breaches
Private Sector	26,437	£70,924,600
Public Sector		£16,312,100
Wider Society		Not calculated
TOTAL		£87,236,700

Notes: Figures may not add due to rounding.

⁴² London Borough of Bromley (2016) *Waste4fuel Land Deal Complete*, http://www.bromley.gov.uk/press/article/1149/waste4fuel_land_deal_complete

3.7 Summary of the Economic Impact of Waste Crime

The activities analysed above are undertaken by a wide range of individuals and organisations. Some are conducted wholly outside the established systems; others are practices adopted by those that otherwise operate within the law, with the aim of reducing costs.

As summarised in the previous sections, the economic impact of waste crime to both the public and private sectors are significant. **When quantified, it is estimated that the annual economic impact of waste crime in England in 2015 was at least £604m.** It should be noted this value does not include

all the impacts that are known to occur. Costs excluded from this estimate include:

- undiscovered illegal waste sites;
- costs of additional raw material extraction and processing due to material lost to recycling processors;
- fraud and misclassification of waste beyond Landfill Tax evasion; and
- costs of serious breaches of permit conditions.

If this level of criminality was to be experienced in other parts of the UK, the total UK impact would have exceeded £731m in 2015. Despite efforts to reduce waste crime the economic, social and environmental cost is growing.

Table 3-8: Summary of the Estimated Economic Impact of Waste Crime in England (2015)

Sector	Private Sector	Public Sector	Wider Society	TOTAL
Illegal Waste Sites	£74,903,100	£11,216,000	£12,190,100	£98,309,200
Illegal Burning	£2,224,100	£16,963,000	Not calculated	£19,187,100
Fly-Tipping	£165,947,900	£30,482,300	£12,843,600	£209,273,800
Misclassification and Fraud	Not calculated	£128,527,000	Not calculated	£128,527,000
Illegal Exports of Waste	£11,620,500	£2,628,000	£15,958,500	£30,206,900
Serious Breach of Permit and Exemptions	£70,924,600	£16,312,100	Not calculated	£87,236,700
Local Authority and EA Enforcement Activities	Not applicable	£31,704,000	Not applicable	£31,704,000
TOTAL	£325,620,200	£237,832,300	£40,992,100	£604,444,600

Notes: Figures may not add due to rounding.

4.0 Causes of Waste Crime

Prior to considering the solutions to combat waste crime, it is first necessary to examine some of the causes and contributing factors. Identifying these is inherently difficult. Deliberately illegal activities are secretive by nature, and each incident can involve a wide range of motivations, some unique to each case.

An understanding of the causes of waste crime has developed through collaborative research with industry, regulator(s) and Government. Conclusions, however, rarely extend beyond repeating the observation that the primary motivation for waste crime is financial gain. In fact, that there are two factors necessary for a crime to occur: reward and opportunity.

Whilst economic benefits have increased the reward for waste crime, this has to be considered alongside the systemic failures in the way the sector operates that mean that the risk of detection of waste criminals has remained low. The reasons for this can be grouped as follows:

- Legislation and policy;
- Market dynamics;
- Operators; and
- The regulator(s).

The following sub-sections describes each of these in more detail.

4.1 Legislation and Policy

The waste sector operates under a plethora of legislation and policy, as described in Section 2.1. The waste and resource industry adapts and responds quickly to market conditions and opportunities, sometimes over days and weeks; the legislative base evolves over a much longer time, taking many months or even years to adapt. The following sub-sections summarise some of the key issues identified.



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4.1.1 Focus on Site Based Regulation

As waste is increasingly managed as a resource, waste management activities have become ever more complex: waste is transported longer distances and handled by an increasing number of operators, each seeking to extract some value from their cargo.

Regulatory effort remains overwhelmingly focused on sites where waste management operations occur. Sites with environmental permits have to comply with a variety of duties, ranging from the presence of a technically competent person to the completion of data returns. Perhaps most importantly, they have to pay an annual subsistence fee which funds Environment Agency inspections. In adherence to the risk-based approach, sites that perform well receive less frequent inspections and therefore pay lower annual fees.

Critically, other parts of the waste management chain are not subject to this level of regulation. Far less effort is expended on waste producers, carriers, brokers and dealers. As discussed in Section 2.0, illegal activities can occur throughout the waste management chain, and often occur prior to waste arriving at permitted sites. These weaknesses are attributable to the fact that when waste first enters the system (usually via waste carriers) there are few reliable controls to ensure that it is effectively tracked and managed. It therefore can be argued that the focus on site-based regulation somewhat overlooks a key area of vulnerability.

4.1.2 Ease of Criminal Entry in to the Industry

It is the view of industry that it is too easy for criminals to enter in to the waste management sector. At its simplest level, waste crime can be committed by an individual with just a vehicle and uninformed and/or mislead waste producer.

Often regulations in place are poorly enforced. Within some critical components of the sector, the regulatory hurdles can be overcome by a few clicks on a computer. It would be hard to describe it as an effective regulatory system.

Currently there are understood to be over 180,000 registered waste carriers, brokers and dealers⁴³; and, as highlighted in Section 4.1.1, little regulatory effort is focused on these stages of the value chain.

For lower tier waste carrier registrations (those who transport their own waste) registration is free. For upper tier carriers, the fee is currently £154 for a three year period. The application is straightforward, capturing only very basic administrative details. Importantly, knowledge of waste regulations is not tested at application stage and there is no test of competence – or even of criminal record, unless the convictions are directly relevant. Yet by obtaining a registration, those looking to abuse the system can easily adopt the appearance of legitimacy with de facto endorsement from the regulator.

Similar issues reside in the exemptions scheme. Currently there are over 500,000 registered exemptions on 94,000 sites for using, treating, disposing and storing waste.⁴⁴ Individuals and organisations must register their specific exemption; however, with only a minimal number of inspections, the system is not adequate to ensure that operators comply with the conditions of their exemption. The registration process is not dissimilar to the waste carriers, brokers and dealers scheme: registration is available free of charge and little more than basic administrative details are captured.

This light-touch approach has been fostered in response to the economic downturn since 2008 and the resulting desire to promote growth. Government has been eager to cut ‘red tape’ and to be perceived as ‘business-friendly’: under the Deregulation Act 2015 the Environment Agency now has a duty to have regard to economic growth, which has the potential to run counter to its principal aims if exercised incorrectly.⁴⁵ A regulatory approach that may be laudable in some industries is a poor fit for a sector that in its current form only exists through regulation and enforcement. This has increased the opportunity for illegal activity - ultimately damaging – rather than supporting legitimate businesses.

⁴³ Private communication with the Environment Agency, February 2017

⁴⁴ Private communication with the Environment Agency, February 2017

⁴⁵ HM Government (2015) *Deregulation Act 2015*, 2015, <http://www.legislation.gov.uk/ukpga/2015/20/contents/enacted>

4.1.3 Insufficient Deterrent Effect for Small Operators

In deciding whether to carry out an illegal act, a rational offender will weigh up the risk of receiving a punishment against the likely rewards. *“Waste Crime: Tackling Britain’s Dirty Secret”* identified the lack of an adequate deterrent as a contributory factor in the proliferation of criminal activity in the waste sector. This is particularly true for small operators and individuals.

The Sentencing Council for England and Wales produced new guidelines for environmental crimes in 2014.⁴⁶ It was felt that the previous guidelines had too much inconsistency and uncertainty regarding how to sentence such offences, whilst fines did not always reflect the severity of the crime. The new guidelines differentiate between offences committed by organisations and those committed by individuals. Additionally, the way in which offenders are categorised and sentenced varies to account for their financial means, culpability, and the harm done.

Whilst the deterrent effect of sentencing for waste crimes has certainly increased for large organisations, this is not always the case for smaller ones. This is primarily due to the means-based approach to imposing fines. Take the hypothetical example of a micro-organisation and a large organisation deliberately committing an identical category 1 crime, such as fly-tipping asbestos in order to save £15,000 in disposal costs. Without any mitigating circumstances, the micro-organisation would receive a fine ranging from £9,000 - £95,000; potentially less than the avoided costs. The fine imposed on the large organisation would range from £450,000 - £3,000,000.

The risk-reward calculation for smaller organisations is clearly very different to that of large organisations. Furthermore, it is not always possible to accurately calculate the economic benefits of committing a waste crime, or the true financial means of an organisation. Calculating the latter relies upon the organisation providing comprehensive accounts for the previous three years. If such documents are not disclosed, or they are deemed unreliable, then the court must draw its own conclusions. This clearly opens the door to abuse by offenders wanting to hide their true financial means and so avoid large fines.

Larger organisations are more likely to maintain comprehensive financial accounts, as unlike smaller organisations, they are subject to annual audits. Consequently, smaller organisations are better able to abuse the means-based sentencing system.

4.2 Market Dynamics

Alongside the basic rules and regulations governing the waste sector there are also norms and practices that have steadily developed over time. Some of these can encourage detrimental impacts in the waste sector, and are discussed in more detail in the following sub-sections.

4.2.1 Upfront Payment for Services

Financial transactions in the waste industry are structured around payments made by waste producers to service providers. These payments account for the whole life cost of waste – its transportation, sorting and treatment/disposal. Waste service providers are paid upon accepting waste; effectively taking payment in exchange for accepting the liability of managing the waste through to its end-of-life.

This system creates opportunities for illegal activity. Having already received payment, a service provider is able to default upon their obligation to perform a service, often without suffering financially. This may be a deliberate strategy adopted by an organisation in order to turn a profit. Alternatively, it may be an option of last resort if an organisation misjudges the total liability of the waste and lacks the necessary financial provisions to perform the required services. In other cases, it may be the product of ignorance regarding the law.

In such situations the opportunity ultimately stems from inadequate financial provision for the waste. For example, with the exception of landfill sites, environmental permits do not incorporate any measures to ensure that an organisation has the necessary financial provisions, such as bonds, insurance or escrow accounts, to enable it to make good on the liabilities that it accepts when it receives waste.

⁴⁶ Sentencing Council (2014) *Environmental Offences Definitive Guideline*, July 2014, https://www.sentencingcouncil.org.uk/wp-content/uploads/Final_Environmental_Offences_Definitive_Guideline_web1.pdf

4.2.2 Hard to Detect Crime and Limited Awareness of Responsibilities

There are a number of characteristics inherent to the waste management sector that make it difficult to detect illegal activity. Waste management activities can cause disamenity, especially if operated close to local populations. For this reason, they are usually operated in out of the way locations that are less visible to the general public. Such sites will also appeal to those wishing to conduct illegal activities, making it difficult to discern, at first sight, the difference between legitimate and illegitimate sites.

Compounding this issue, the complexity of the legislative framework is not well understood by those outside the industry. Accordingly, it can be difficult for individuals and organisations to identify an illegal activity. Awareness campaigns such as *“Right Waste Right Place”*⁴⁷ have contributed to resolving this issue, but far more can and should be done.

4.2.3 Variability and Volatility in Commodity Prices

As we have moved away from landfill and towards higher tiers of the waste hierarchy, waste has increasingly come to be viewed as a resource. In tune with this, the ability of operators to understand and engage in secondary markets for waste has become more important. This is especially the case for the recycling industry, as recyclates often compete with virgin materials on the open market.

Market volatility is itself not necessarily an issue, as organisations often adopt the necessary precautions, such as hedging and the purchase of options, to ensure their resilience. Problems can arise, however, when market volatility is so great that the pace of change outstrips operators' ability to make business decisions, or when organisations fail to adapt to changing markets.

This is the inevitable consequence of a number of factors:

- an industry which includes numerous small companies unlikely to develop complex financial planning;
- a distinct lack of government led shared commodity risk and reward schemes; and
- a market structured around upfront payments for services.

When this short-term business approach coincides with extreme market volatility, waste service providers may be priced out of the market, stuck with a liability that has become unmanageable.

This provides a clear incentive to break the law. For example, a transfer station may choose to hold onto waste in the hope that the resource price recovers sufficiently that they can move the waste on. In doing so, they may end up storing waste in quantities beyond their permit limits, thus increasing the risk of fires. Likewise, by misclassifying waste they can render it eligible for landfilling as an inactive material and so need only pay the lowest tax rate. In extreme cases, they may just dispose of the waste through fly-tipping, illegal burning, or illegal export.

4.2.4 Increased Cost of Waste Management

Almost all waste crime has an economic element to it. Increases in Landfill Tax has meant that landfill is no longer the cheapest form of waste management. Avoiding increases in costs can deliver significant economic benefits; unfortunately this also applies to those who choose to operate outside of the law.

⁴⁷ See <http://www.rightwasterightplace.com/>

4.3 Operators in the Waste Industry

In some cases certain characteristics of operators also contribute to waste crime, these are discussed in more detail in the following sub-sections.

4.3.1 Operator Competence

Understanding the various rules and regulations within the waste sector is an important factor that may help to reduce the occurrence of illegal activity. As identified in previous sections, the test for operator competence is only applied to those who have environmental permits. Highlighted in previous consultations by Defra, there are concerns that the competence of some operators is not being assessed sufficiently stringently.⁴⁸

Beyond this issue, there are other areas of the sector where operator competence is assumed and not tested. This includes waste carriers, brokers and dealers who have important duties relating to classifying waste and ensuring that it is sent to authorised sites.

4.3.2 Fragmentation of Operators in the Waste Sector

Associated with the move away from landfill, the waste sector has become more fragmented and the range of treatment options for waste has greatly increased. Greater numbers of organisations and individuals are operating than historically, exacerbated by the low barriers to entry, especially for brokers, carriers and sites operating under exemptions. This fragmentation has created competition in the market that has benefited producers of waste. But it has also increased the risk of illegal activity occurring due to the complexity of business transactions.

Some of the key weaknesses in the sector occur when the liability of waste management is exchanged. The opportunity for either intentional

(or unintentional) misclassification of waste and/or defective pricing can facilitate illegal activity. Brokers, who trade and move millions of pounds worth of business driven primarily on price, and are only indirectly connected with the actual practice of waste collection, can add a layer of complexity to the transaction. As mentioned in Section 4.1.3, without adequate testing of operator competence there is a lack of safeguards in the sector that would ensure that operators are sufficiently capable to carry out their duties.

4.3.3 Poor Culture of Sharing Intelligence

Many of the issues highlighted in this report focus on the factors that contribute to waste crime. It is also important to consider opportunities to improve its detection. It is understood that the sharing of information between the regulators (primarily the Environment Agency) and legal operators could be improved. Despite the concerns that operators may have about the possibility of reprisals from criminals, much information is passed to the Environment Agency through Crimestoppers. However, all too often the information lacks crucial details, making it difficult to act on. Furthermore, where information is provided confidentially, it is impossible to go back to the informant to seek clarification. This is frustrating for the Environment Agency and prevents effective investigations.

4.3.4 Lack of Financial Resilience of Operators

For some operators, competition is extensive and profit margins small. This can leave operators with limited reserves and an inability to manage fluctuations in the market or recover from misjudged pricing strategies. As identified in earlier sections, operators that have insufficient financial provision to manage the whole life costs of waste can, in some instances, be incentivised to undertake illegal activity.

⁴⁸ Department for Environment Food and Rural Affairs (2015) *Waste crime: consultation on proposals to enhance enforcement powers at regulated facilities; and call for evidence on other measures to tackle waste crime and entrenched poor performance in the waste management industry*, February 2015, https://consult.defra.gov.uk/waste/enhanced_powers_to_tackle_waste_crime/

4.4 The Regulators

Strong regulators are needed to ensure that the body of waste regulations is adhered to in a consistent manner. In this section we explore potential weaknesses in the current regulatory approach.

4.4.1 Lack of Focus on Economic Damage of Waste Crime

When action is taken against some illegal activities, such as the operation of illegal waste sites, the waste is not always returned to the legitimate industry. This most often happens in cases where there is deemed to be little environmental impact (i.e. risk of waste polluting a water course). This can harm the industry, denying operators legitimate revenue, and blight land and property where waste is left behind.

The Environment Agency has a suite of powers available to it when it commences enforcement action. These include the ability to require the removal of waste unlawfully deposited via the issuing of a Section 59 notice under the Environmental Protection Act 1990. Unfortunately this power is used infrequently and, on the face of it, only when there is a serious threat to the environment and human health. This represents a lost opportunity to recover some of the economic damage associated with waste crime.

4.4.2 Limited Funding and Resources

The funding of waste regulation and enforcement in the Environment Agency is split into two distinct models: charges levied on operators with permits and grant-in-aid funding provided by Defra. In recent years it has also received a number of “one off” sums from HM Treasury to support its work on waste crime.

Routine inspections for environmental permits are funded via annual subsistence fees paid by operators. These assess the risk associated with each activity, with charges levied on poorly performing sites set at higher levels than those for better performing sites.

Unfortunately, a large proportion of the regulator’s activity in the waste management sector is not covered by such a system of charges, which prevents costs from being recovered from those who are regulated. For example, the exemptions, waste carriers and waste brokers regimes do not levy annual subsistence fees and there is currently no method for regular inspections to be funded by registration holders. Additionally there is no source of direct funding for Duty of Care inspections of waste producers or carriers, whether by the Environment Agency or local authorities. As grant in aid is falling year on year, this has meant that significant parts of the waste management system are largely unregulated.

5.0 Recommendations

Based on the analysis provided in this report, fourteen recommendations have been provided on how waste crime can be tackled more effectively. These have been organised into the following themes:

- Modernising the regulatory regime;
- Improving enforcement efforts;
- Developing secure sources of enforcement funding; and
- Improving cross-regulatory cooperation and raising awareness.

Taken as a whole, these recommendations will reform the waste management system in England, building on the Waste Crime Action Plan.⁴⁹ They seek to ensure that the system is fit for purpose; facilitating the move towards a zero waste economy.

5.1 Modernising the Regulatory Regime

It is clear that many of the causes of waste crime are related to key failures in the existing rules and regulations, whereby large swathes of activity are not being routinely inspected. This section provides a series of recommendations on revising two key components of the waste management system – the rules governing:

- Waste carriers, brokers and producers; and
- Waste exemptions.

In light of the UK invoking Article 50 of the Treaty on European Union and stating its intention to leave the European Union, many of the rules and regulations focussed on waste and resources will be actively reviewed by Government. This process could provide an opportunity for these recommendations to be considered.



(c) Environment Agency

⁴⁹ Department for Environment Food and Rural Affairs (2015) *Waste crime: consultation on proposals to enhance enforcement powers at regulated facilities; and call for evidence on other measures to tackle waste crime and entrenched poor performance in the waste management industry*, February 2015, https://consult.defra.gov.uk/waste/enhanced_powers_to_tackle_waste_crime/

5.1.1 Waste Carriers, Brokers and Producers

Recommendation 1: Reforming the Waste Carrier, Broker and Dealer Registration Process

For the majority of individuals and businesses, their first engagement with the waste management industry is via their waste carrier or broker. There is a reliance on carriers and brokers to provide reliable advice and ensure that their waste is being managed legally. The requirements for becoming a registered waste carrier, broker or dealer are simply too lax. They do not currently have to provide any reasonable demonstration of their knowledge of the rules and regulations of the waste management sector. This must be addressed, especially given the growing role of brokers and dealers more generally, as well as in connection with waste exports.

Waste carriers, brokers and dealers are the main interface between waste producers (who, despite the best efforts of campaigns like *“Right Waste, Right Place”*⁵⁰, will generally be somewhat ill-informed regarding the rules) and the waste management sector. Waste producers should be able to rely on a registered entity to be competent and to act in accordance with the law. They should be a trusted source of advice on how to manage waste lawfully.

Additionally, risk is not adequately factored in to the registration system. Whilst the Upper and Lower Tier system provides a distinction between those who carry their own waste and those who carry the waste of others, the registration charge does not vary to reflect how much waste is carried, or the scale of a brokerage operation. Nor is it set at a sufficiently high level to cover the costs of inspecting carriers. A low registration fee keeps the direct costs to businesses low, but has significant indirect costs. It is unduly easy for those looking to abuse the system to establish a business that outwardly appears legitimate.

There is a need for Government to consider this in far greater detail, ensuring efforts are focussed upon raising standards and improving enforcement of illegal activity. It is therefore recommended

that Government should seek to raise the requirements and standards for becoming a waste carrier or broker by introducing a competency test to ensure that operators have the necessary expertise to perform their respective tasks. For example, operators should have to prove that they are able to identify and describe waste types according to the European Waste Catalogue, and demonstrate an awareness of basic regulations. These competency tests should be based upon a tiered system to ensure that the level of expertise required reflects the waste management activities carried out. Registration fees should also be increased and hypothecated (ring fenced) for an adequate inspection regime.

The net effect of these measures should raise the entry requirements to become a registered carrier. This should act as a barrier to unscrupulous and unprofessional organisations working in the sector, ensuring that only capable and professional organisations are involved in the sector. It is likely that this will result in a reduction in the number of registered carriers and brokers: some will fail to meet the required standard, while others may be struck off the register as a result of an unacceptable level of infringements being identified by the regulator.

Recommendation 2: Mandate the Use of Electronic Waste Transfer Notes

As part of the waste producers’ duty of care there is obligation to provide an accurate description of the waste when it is transferred to another person. Individual waste transfers are recorded by creating a waste transfer note (WTN). It is estimated that more than 23 million paper WTNs are produced each year in the UK, though there is no reliable estimate of the exact number.⁵¹ WTNs are important documents; amongst other things they capture key information about who owns waste, its description, quantity, source and destination. The pen and paper approach to completing these records is inadequate, however, allowing operators undertaking illegal activities to operate with impunity, safe in the knowledge that regulators lack comprehensive data on the waste they have handled.

⁵⁰ See: <http://www.rightwasterightplace.com/>

⁵¹ See: <https://www.environmentalisonline.com/article/qa-chris-deed-edoc>

Given the inefficacy of WTNs, Government should mandate the use of an online system of electronic waste transfer notes (EWTN), accessible to the regulator. This would make the sector far more transparent, as data could be used to track waste movements in near real time. The ability to track waste from cradle to grave is essential for tackling waste crime: discrepancies in the data could be used to identify illegal activity.

Making the system an electronic dataset would also reduce the administrative burden placed upon regulators and businesses, and would vastly improve our ability to measure waste data flows – essential for informing infrastructure planning and policy decisions. Furthermore, utilising EWTNs opens the door to a range of regulatory interventions; many of the recommendations provided within this report will be more effective if supported by good waste data.

Developing the EWTN system will inevitably require investment; however the system could be funded by the increased fees and charges proposed for waste carriers and brokers set out above. Costs could be kept to a minimum by building upon the pre-existing (but under-utilised) frameworks provided by the Edoc and Hazdoc systems – though it may be necessary to consider other alternatives. Establishing how to implement this recommendation will nonetheless require additional work to assess the most effective route to market and to establish the simplest way to record the transaction. Consideration should also be given to interfacing with existing electronic systems run by waste management companies.

5.1.2 Waste Exemptions

Recommendation 3: Reform the Waste Exemption Regime

The waste exemption regime aims to provide an effective method of regulating lower risk activities. However, as discussed in previous sections of this report, there are currently over 500,000 registrations in place⁵², with too few checks and balances to ensure that activities being undertaken are actually low risk. Accordingly, at an aggregated level, the regime can no longer be classified as low risk.

Some of the waste management activities carried out under exemptions are genuinely low risk; however, the rules governing registered exemptions can allow the management of large quantities of waste, especially where “exemption stacking” takes place, and in such circumstances the totality of the activities may represent a greater risk. In addition, it is understood that waste exemptions can be registered alongside environmental permits. This could potentially be abused by operators who wish to avoid some of their activities from being included within their permit conditions.

This issue has been recognised by Government and it is understood that Defra and the Welsh Government are planning a consultation on amending the current regime in the summer of 2017. Without prejudging this consultation, it is recommended that the waste exemptions regime is reformed, with the aim of focussing the regime on genuinely low risk activities. The new exemption regime should have the following features:

- significantly lower limits on the quantities of waste to be managed under an exemption;
- a maximum number of exemptions allowed to be held at a particular site;
- shorter registration periods, with the need to renew more frequently;
- a charge for higher risk activities, some of which (e.g. scrap metal operations, anaerobic digestion, or spreading of organic material to land) should be reviewed as potentially meriting inclusion in the permitting system;
- properly funded periodic inspections to ensure that the rules of the exemptions are being adhered to;
- a process to rapidly review and amend exemptions if market issues arise that change the risk profile underlying the original application; and
- consider whether it is appropriate to have both exemptions and environmental permits on the same site.

⁵² Personal communication with the Environment Agency, February 2017

5.2 Improving Enforcement Efforts

Whilst this report has highlighted a number of failures and recommended changes in the waste management system, improvements can also be made to the way the regulators undertake their duties within the existing framework.

Recommendation 4: Enforce Failures in Duty of Care by Waste Producers

As identified in previous sections of this report, some of the failures in the waste management system occur at the very earliest stage, with producers inadvertently or irresponsibly transferring waste materials to carriers that do not manage waste in line with their legal obligations. Following the introduction of the recommendations outlined in the previous sections, measures should be introduced to ensure that producers fulfil their legal obligations. First and foremost, producers should be deterred from using unregistered waste carriers. Enforcement action should therefore be brought against producers whose waste ends up in the hands of an unregistered carrier, trader or broker.

Other options for strengthening Duty of Care could also be further explored. For example, banning cash payments for waste transfers might allow regulators to follow financial transactions more easily. Additionally, passing liability to waste producers and carriers could also be considered. A proportion of costs associated with clear up and/or landfill tax could be passed on to the waste chain (producer, carrier, broker) that led to the waste being deposited illegally. Such a process is understood to be in place for unpaid VAT and key lessons could be learned.⁵³

Consideration should also be given to which enforcement body is likely to be the most effective in undertaking the additional enforcement action. Due to their local presence and familiarity with many of the waste producers, there is certainly

merit in utilising local authorities' resources to undertake some of the additional activity. Many authorities – especially those that operate trade waste services – have waste officers who engage with businesses, but there may also be opportunities to combine checks with the day to day work of environmental health officers or trading standards officers. Clearly, local authorities would need to be suitably funded to undertake this additional work and the risk of duplicated regulation carefully assessed and managed.

These changes should also be supported by a single accessible point of information for identifying registered waste carriers, traders and brokers. For example, the gov.uk website should list all registered operators, and include contact details for ease of access. Local authorities should also signpost to this single point of information. In addition, efforts should be made to increase the awareness of producers' basic responsibilities, for example by increasing funding to awareness schemes such as *"Right Waste, Right Place"*.

Recommendation 5: Enforce Failures in Duty of Care by Waste Carriers and Brokers

Waste carriers and brokers are subject to minimal levels of inspection, meaning that accurate descriptions of waste are rarely enforced. Paper waste transfer notes do not give regulators the means to track the waste handled by carriers, making it difficult to carry out targeted inspections to ascertain whether the description of waste is accurate.

By implementing the other recommendations outlined in this report it will be possible to ensure that waste is effectively tracked as it moves along the waste management chain. Government can design current data limitations out of the sector, thereby facilitating the use of intelligence-based enforcement against carriers and brokers where data suggests they may be breaking the law.

⁵³ See: <https://www.gov.uk/government/publications/vat-notice-726-joint-and-several-liability-for-unpaid-vat/vat-notice-726-joint-and-several-liability-for-unpaid-vat>

Recommendation 6: Apply Bans to Repeat and Serious Offenders

Deterrence is key to reducing the prevalence of waste crime. Despite the recent improvements to the sentencing guidelines for environmental offences⁵⁴, there is still more that should be done. One such measure would be to make it more difficult for individual convicted waste criminals to re-enter the sector: the prospect of a lengthy ban can heavily offset the perceived profitability of an illegal waste activity. This could be implemented by banning convicted waste criminals from applying for environmental permits, waste exemptions and waste carrier, broker and dealer registrations for a specified period (i.e. five years).

Consideration should be given to the manner in which bans would be imposed, and lessons can be taken from the points-based system employed by the DVLA in respect of driving licences. Bans could be imposed if a convicted waste criminal accumulates a certain number of penalty points against their name, with the length of the ban commensurate with the total number of points. Whilst there may be an argument to impose lifetime bans on the most serious of waste criminals, doing so would preclude any opportunity for rehabilitation.

Recommendation 7: Increase the Timeliness of Enforcement Interventions

There is a perception in the industry that it takes too long to stop illegal waste sites. Government recognised this issue and committed to action in the Waste Crime Action Plan, but this has not yet borne fruit.⁵⁵

There were 203 permitted persistent poor performers at end 2014/5.⁵⁶ These pose at least as much risk as many illegal sites and it is important that action by the regulator leads to the rapid rectification of problem behaviour.

It was reported that 51% of non-compliant operations were shut down in 90 days or less during 2015/16.⁵⁷ For each day that an illegal site is active, it will continue to adversely impact the surrounding environment and the profitability of legitimate waste management businesses. In consideration of this, we suggest that a shorter target should be aimed for. Any new target would need to be carefully designed so as to avoid focusing regulatory efforts on the sites that are easiest to close, rather than those doing the greatest harm.

Recommendation 8: Enhance Understanding of Waste Market and Price Dynamics

There is evidence to suggest that the regulator does not give the necessary level of focus to the financial consequences of waste crime. Indeed, the annual Waste Investigation Reports published by the Environment Agency assess the impact of incidents according to three criteria, all of which relate to environmental impacts.⁵⁸

Determining the economic consequences of waste crime is not necessarily easy. At the very least, any such calculations should factor in costs to both local authorities and industry, considering the market prices for different waste types. A deeper understanding of material price dynamics would enable the regulator to react more rapidly to changes in the market. It would also make it easier to identify offending operators; for example, where a waste facility offers gate fees that are significantly below current market prices in a particular region.

There may be a role for industry to play. Providing regular briefings on market prices would ensure that the regulator is equipped with up-to-date knowledge and a strong understanding of the economic context in which waste criminals operate.

54 Sentencing Council (2014) Environmental Offences Definitive Guideline, July 2014, https://www.sentencingcouncil.org.uk/wp-content/uploads/Final_Environmental_Offences_Definitive_Guideline_web1.pdf

55 Department for Environment Food and Rural Affairs (2015) Waste Crime Action Plan, February 2015, https://consult.defra.gov.uk/waste/enhanced_powers_to_tackle_waste_crime/supporting_documents/Waste%20Crime%20consultation%20and%20call%20for%20evidence%20document.pdf

56 Environment Agency (2016) Regulating the waste industry: 2015 evidence summary, September 2016, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/553539/Regulating_the_waste_industry_2015_evidence_summary.pdf

57 Environment Agency (2016) *Waste Investigations Report*, 2016, <https://data.gov.uk/dataset/waste-investigations-report>

58 Ibid

5.3 Developing Secure Sources of Enforcement Funding

In order to make enforcement effective, two key conditions must be met. First, the enforcement regime must be sufficiently intensive to make potential waste criminals believe it likely that they will be identified and penalised; and secondly, the penalties must exceed the financial advantages that are likely to accrue from breaking the law.

In order to make the enforcement regime credible, there is a fundamental need to ensure that regulators are in a position to carry out their enforcement duties. As highlighted in “Waste Crime: Britain’s Dirty Secret”, enforcement can deliver economic benefits, both to the public and private sectors, in addition to the benefits that come from ensuring that the system operates fairly and brings wrongdoers to justice. It is therefore important that enforcement action is supported by a reliable and robust funding model.

Fees and charges should allow for full cost recovery from permitting and from the carrier, broker and dealer system, so that inspection can help increase compliance and reduce waste crime. Funding for enforcement activity needs its own funding model, which may reduce over time as higher levels of compliance are achieved.

Recommendation 9: Impose Landfill Tax on Illegal Waste Sites

One of the key methods of combatting waste crime is to ensure that there is a sufficient deterrent effect in place. Whilst much progress has been made in this regard via the revised sentencing guidelines for environmental offences⁵⁹, too often fines levied for illegal activity still do not match the profits derived from the unlawful activity.

One method of providing a deterrent is to allow Landfill Tax to be levied on the waste found to have been disposed of or abandoned at illegal waste sites. The aim of this proposal is to deter non-compliance by making waste crime less profitable, and reinforce the polluter pays principle. At the time of writing, HMRC is consulting on this proposal, examining a number of important considerations. The consultation is welcome and the changes are largely supported.⁶⁰

Looking beyond these proposals, further action may be warranted. It is understood that there are still tens, if not hundreds, of illegal waste sites not yet discovered. Government should consider temporarily hypothecating (ring fence) a proportion of the additional Landfill Tax receipts from the measure described above to support front line enforcement activities. This additional funding would provide a stimulus to enforcement bodies such as the Environment Agency and HMRC to tackle some of the most damaging illegal activity.

Over time it is expected that the stimulus will be successful in identifying illegal waste sites and those engaged in misclassification of waste that results in Landfill Tax evasion. As a result, the need for additional funding will reduce. Indeed, as the tonnage of waste being illegally disposed of reduces, the measure will tend to produce less income. Nevertheless, it is recommended that the measure be kept under review so as to avoid creating a (perverse) incentive for enforcement bodies to tackle low-level criminality in order to generate income. Enforcement bodies should always focus on those activities which represent the greatest harm, and their funding should not incentivise them to act otherwise.

59 Sentencing Council (2014) *Environmental Offences Definitive Guideline*, July 2014, https://www.sentencingcouncil.org.uk/wp-content/uploads/Final_Environmental_Offences_Definitive_Guideline_web1.pdf

60 HM Revenue and Customs (2017) *Landfill Tax: Whether to bring illegal waste sites within the scope of Landfill Tax*, March 2017, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/601022/Landfill_Tax-Whether_to_bring_illegal_waste_sites_within_the_scope_of_Landfill_Tax.pdf

Recommendation 10: Ring-Fence Landfill Tax Revenue for Enforcement

It is clear that grant-in-aid funding from Defra is not sufficient to fund all of the regulators' enforcement duties in the waste sector. Some, especially those relating to enforcing failures by waste carriers, producers and exempt sites, are not being adequately prioritised due to lack of funding.

Since the publication of *"Waste Crime: Britain's Dirty Secret"*, there have been successive commitments by Government in annual budget statements to utilise underspend within the Landfill Communities Fund to fund waste crime enforcement. Whilst this has been helpful, it has not provided a long term, reliable source of funding to address the problem.

In order to address this issue it is therefore recommended that a segment of Landfill Tax receipts are hypothecated for waste crime enforcement. The overall budget required should be decided upon by the respective regulators alongside Defra and HMRC. The budget should be made available to regulate the whole waste sector, and not just illegal waste sites; this includes failures by waste producers and carriers. For some types of waste crime, there is merit in considering a specific pot of money available to certain regulators. For example, failures by waste producers are likely to be addressed most cost effectively through local authority enforcement resources.

It is recognised that Landfill Tax receipts are forecast to decline as the tonnage of waste sent to landfill decreases, which may make this source of revenue unsustainable in the long term. Accordingly, it is recommended that consideration should also be given to the development of a longer term solution that is in alignment with the other recommendations included within this report.

5.4 Improving Cross-Regulatory Cooperation and Raising Awareness

As identified in earlier sections of the report, it is recognised that there is a critical role for local authorities to help prevent waste crime. Beyond their involvement in direct enforcement, there may also be merit in allocating specific duties to local authorities. The following recommendations are therefore made.

Recommendation 11: Increase Resource Flexibility and Co-ordination

Much has been done to prevent waste crime, and enforce against its perpetrators. The Environment Agency works closely with its immediate counterparts in Scotland (SEPA), Wales (NRW) and Northern Ireland (NIEA). The Environment Agency also exchanges criminal intelligence on environmental crime internationally and works with various organisations, exchanging intelligence, data and information associated with environmental crimes.

Despite these activities, there is a strong desire to enhance the co-ordination between all agencies and authorities in tackling waste crime. This includes local authorities (many of which have already created regional intelligence databases) and HMRC; both often capture key pieces of information through the delivery of their duties. Additionally, for the most serious offences, there is merit in engaging within the National Crime Agency and Serious Fraud Office. It is therefore recommended that a more formal approach to managing this interaction is agreed.

In addition to improved coordination, there is a need to ensure that resources are focused on areas where they are needed most, and that they can be mobilised quickly. Currently, a large amount of resource is directed towards site-based regulation and inspecting compliant operators. Whilst this is important work, the workforce should be flexible enough to focus on other aspects of the regulatory framework (e.g. waste carriers, brokers and dealers and waste exemptions). This would enable a faster and more targeted approach to preventing non-compliant behaviour and putting a stop to criminal activity.

There is also a need to ensure that regulations are flexible and well adapted to addressing the problem. Defra could improve the quality of regulation by considering as a matter of course a "crime proofing" assessment of changes it makes in waste legislation. This might involve more in depth consultation with the industry, the Environment Agency and other interested parties to consider any loopholes, and opportunities and inherent weaknesses in draft legislation before it is finalised.

Recommendation 12: Fund Awareness Campaigns Focussed on Waste Producers

The recommendations outlined above will help to ensure that registered waste carriers, traders and brokers are both competent and professional. Additionally, the use of electronic WTNs will allow producers to better interrogate their data and understand where their waste has been transported to. As a result, waste producers will be better able to ensure that they engage with a professional waste collection service.

Nevertheless, producers' awareness of the rules and regulations associated with waste is currently insufficient to enable them to confidently comply with their obligations. It is therefore recommended that awareness campaigns focussed on explaining basic responsibilities to waste producers should be undertaken. Building on proposals to improve the competence of carriers and brokers, it will be possible to focus on a simple core message: "use a registered waste carrier". Producers can then be held accountable for meeting their obligations through a properly enforced, transparent duty of care system that allows mismanaged waste to be traced back to its source.

The responsibility for organising the campaigns should be primarily focussed on the Environment Agency, but active engagement with local authorities and businesses should be encouraged, and delivery might be undertaken through third sector organisations. An obvious starting point for any campaign is to build upon the work of *'Right Waste, Right Place'*⁶¹.

It is recognised that there are many different approaches that could be taken to funding such campaigns, and the waste industry is happy to play its part. An obvious additional source is to use money gathered from enforcement undertakings accepted by the Environment Agency, especially in relation to waste crime. To ensure that the campaigns are as effective as possible, that lessons are learned and that value for money is maximised, it is also recommended that they should be independently evaluated.

Recommendation 13: Obligation on Local Authorities to Identify Legal Operators for Managing C&D Waste

Construction and demolition (C&D) waste represents one of the largest sources of waste

involved in criminal activity. When generated at a domestic scale, it is seldom managed under a clearly defined contract and is often collected on an informal basis. Producers are often unaware of their obligations; this represents a key pathway for waste to enter the illegal sector.

Often individuals and organisations will turn to their local authority to seek guidance on how to manage their waste. Unfortunately, much of the guidance provided by local authorities is aimed at ensuring C&D waste does not enter the municipal waste stream; it focuses on negative messages on what can't be done with the waste rather than offering advice and support on how to manage it properly.

Accordingly, it is recommended that an obligation should be placed upon local authorities to identify transfer stations able to handle C&D waste. This could be as simple as ensuring that it maintains a web page or other data source containing contact details of registered transfer stations and waste carriers, which is presented on a prominent place on its website.

Recommendation 14: Obligation for Local Authorities to provide End Destination Reports

Local Authorities handle and control huge amounts of waste. Data released by the Environment Agency reveals that some of the waste managed on their behalf is sent to poorly performing sites. Since local authorities are accountable to the public, they should be obliged to report where their waste has been transported to, and provide evidence of the performance of the sites. Councils should in any case be collecting this information to report to Government within WasteDataFlow, and should ensure that any contractors that handle or treat waste on their behalf are in a position to provide the necessary data.

A further step would clarify local authorities' duty of care obligations by requiring them to ensure that none of the waste overseen by a collection or disposal authority is ever sent to a site that is in breach of its permit, or is otherwise handled by any party that does not have the appropriate licence or permit in place. Each year, the authority might be required to carry out an assessment to confirm that they have complied with this duty, or to report any breaches that have occurred.

⁶¹ See: <http://www.rightwasterightplace.com/>

Appendices

A.1.0 Economic Modelling Assumptions

Supporting the economic assessment provided in Section 3.0 an economic model has been developed. This models the impact of various waste crimes. The data for the model is predominately

sourced from the Waste Investigations Report.⁶² Critical to the functioning of the model, are a number of key assumptions. These are outlined as follows.

A.1.1: Gate Fees in England (2015)

Technology / Process	Cost / Tonne	Source
MRF	£15.00	WRP Gate Fees Report 2016 (median figures) for England (inc. London)
MBT	£85.00	
Organic Treatment	£32.00	
EfW	£86.00	
Wood Waste Treatment	£38.00	
Landfill (excluding tax)	£20.00	
Hazardous Treatment	£150.00	Eunomia best estimate
Waste Tyre Collection	£5.00	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/289927/geho0312bwdy-e-e.pdf
Transport / Haulage	£15.00	Eunomia best estimate

⁶² Environment Agency (2016) *Waste Investigations Report*, 2016, <https://data.gov.uk/dataset/waste-investigations-report>

A.1.2: Waste Flows for Illegal Waste Sites and Fly-tipping (Counterfactual Scenarios)

Scenario	Waste Types	Hazardous Treatment	Landfill (Inactive)	Landfill (Active)	EfW	MBT	MRF	Organic Treatment	Wood Waste	Reuse
Illegal Waste Sites	Agricultural ¹	0%	0%	20%	0%	0%	0%	80%	0%	0%
	Asbestos ¹	100%	0%	0%	0%	0%	0%	0%	0%	0%
	Biodegradable ¹	0%	0%	30%	5%	0%	0%	65%	0%	0%
	Commercial ¹	0%	0%	25%	65%	5%	0%	5%	0%	0%
	C&D (Inactive) ¹	0%	50%	0%	0%	0%	0%	0%	0%	50%
	C&D (Active) ²	0%	0%	18%	0%	0%	77%	0%	5%	0%
	Green ²	0%	0%	30%	5%	0%	0%	65%	0%	0%
	Household ¹	0%	0%	25%	65%	5%	0%	5%	0%	0%
	Liquid Wastes ¹	0%	0%	0%	5%	20%	0%	60%	0%	15%
	Metal ¹	0%	0%	0%	0%	0%	100%	0%	0%	0%
	Packaging ³	0%	0%	36%	5%	0%	59%	0%	0%	0%
	Tyres ³	0%	0%	0%	39%	0%	29%	0%	0%	32%
	Vehicles ⁴	0%	0%	0%	0%	0%	100%	0%	0%	0%
	WEEE ³	0%	0%	20%	10%	0%	60%	0%	0%	10%
	Hazardous Waste ³	100%	0%	0%	0%	0%	0%	0%	0%	0%
	Wood ¹	0%	0%	1%	17%	0%	0%	0%	82%	0%
Fly-Tipping	Agricultural ¹	0%	0%	80%	0%	0%	0%	20%	0%	0%
	Asbestos ¹	100%	0%	0%	0%	0%	0%	0%	0%	0%
	Biodegradable ¹	0%	0%	80%	5%	0%	0%	15%	0%	0%
	Commercial ¹	0%	0%	40%	60%	0%	0%	0%	0%	0%
	C&D (Inactive) ¹	0%	80%	10%	0%	0%	0%	0%	0%	10%
	C&D (Active) ¹	0%	0%	80%	0%	0%	15%	0%	5%	0%
	Green ¹	0%	0%	30%	5%	0%	0%	65%	0%	0%
	Household ¹	0%	0%	45%	50%	5%	0%	0%	0%	0%
	Liquid Wastes ¹	0%	0%	95%	5%	0%	0%	0%	0%	0%
	Metal ¹	0%	0%	0%	0%	0%	100%	0%	0%	0%
	Packaging ¹	0%	0%	45%	30%	0%	25%	0%	0%	0%
	Tyres ¹	0%	0%	0%	70%	0%	30%	0%	0%	0%
	Vehicles ¹	0%	0%	0%	0%	0%	100%	0%	0%	0%
	WEEE ¹	0%	0%	50%	20%	0%	30%	0%	0%	0%
	Hazardous Waste ¹	100%	0%	0%	0%	0%	0%	0%	0%	0%
	Wood ¹	0%	0%	10%	20%	0%	0%	0%	70%	0%

Source:

- 1) Eunomia Assumption
- 2) Eunomia Assumption (SUEZ Vision Paper mass flow model projection for 2015)
- 3) Defra UK Statistics on Waste (published 15 Dec 2015), Table 5.5 Total waste sent to final treatment, split by method of treatment and EWC-STAT waste material, 2012, UK
- 4) Tyre Industry Federation Factbook (2014) <http://www.tyreindustryfederation.co.uk/wp-content/uploads/2011/12/TIF-Factbook-A5-V3.pdf>.

A.1.3: Destination of Waste Recovered from Illegal Waste Sites and Fly-Tipping Incidents

Waste Type	Landfill (Active)	Landfill (Inactive)	EfW	Source
Agricultural	80%	0%	20%	Eunomia Assumptions
Asbestos	100%	0%	0%	
Biodegradable	50%	0%	50%	
Commercial	50%	0%	50%	
C&D (Inactive)	20%	80%	0%	
C&D (Active)	80%	0%	20%	
Green	50%	0%	50%	
Household	50%	0%	50%	
Liquid Wastes	100%	0%	0%	
Metal	50%	0%	50%	
Packaging	50%	0%	50%	
Tyres	50%	0%	50%	
Vehicles	50%	50%	0%	
WEEE	50%	50%	0%	
Hazardous Waste	100%	0%	0%	
Wood	50%	50%	0%	

A.1.4: Registered Waste Exemptions Non-Compliance

Item	Value	Source
Number of Exemptions (registrations)	528,731	Personal Communications with the Environment Agency
Annual Waste involved in non-compliance at each registration (tonnes)	50	Eunomia estimate
Estimate of Non-compliance (% of all registrations)	5%	Eunomia estimate
Total waste non-compliance	1,321,828	Calculation
Total number of non-compliant registrations	26,437	Calculation



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