

Regulating the waste industry

2015 evidence summary

September 2016

This report summarises Environment Agency statistics on environmental performance, pollution incidents and illegal waste activities in the waste industry. It is for the calendar year 2015. Where data is only available by financial year, it is based on the financial year April 2015 to March 2016.

Main facts

In 2014 to 2015, the 'waste from households' recycling rate reached nearly 45%, the highest on record.

Permitted sites recovered 65% of their waste in 2015, compared to 39% in 2000, and 64% in 2014.

Quality protocols have diverted over 61 million tonnes of material from landfill and have saved businesses around £466 million.

Methane emissions to air from the landfill sector have decreased by 61% since 2002.

91% of the methane collected and combusted in engines and flares at landfills was combusted in engines to generate electricity.

Total fines arising from the prosecution of companies involved in waste activities increased by 85% compared to 2014.

Between 2014 and 2015 the number of:

- permitted waste facilities increased by 2%
- serious pollution incidents caused by permitted waste sites decreased by 36%
- poor performing permitted waste sites has fallen by 20%
- persistently poor performing waste sites has fallen by 6%
- sites of high public interest decreased by 53%

In 2015 to 2016, we:

- found over 1,000 new illegal waste sites
- stopped nearly 1,000 illegal waste sites, more than in the previous 2 years
- stopped more than 50% of new illegal waste sites within 90 days; more than ever before
- inspected 1,388 containers prior to export, compared with 167 in 2012 to 2013

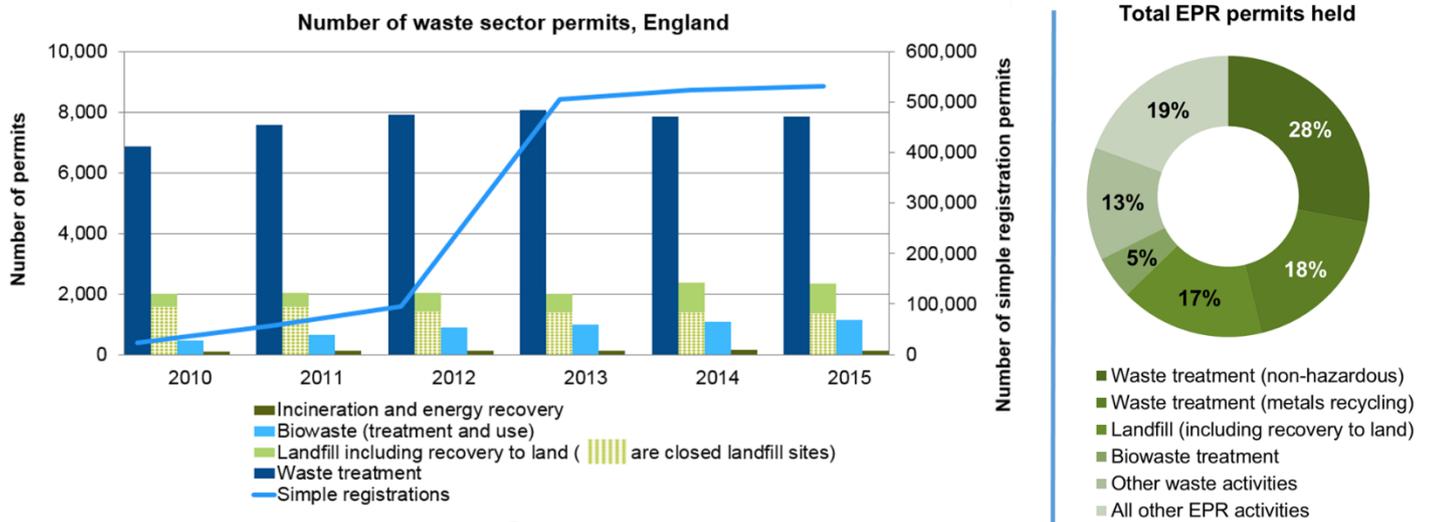
We estimate that illegal exports of WEEE and household waste fell by 17% between 2014 and 2016 with a net benefit to the UK economy of £2.75 million.

The way society manages waste has changed radically over the last 20 years, with implications for people, the environment and regulation. As waste has been diverted away from landfill and up the waste hierarchy, there have been significant environmental benefits but also some environmental risks.

The UK waste management industry includes organisations that manage the collection and transport of waste and those which manage its treatment and disposal. The largest companies often provide the full spectrum of services. The UK waste industry has recently shown steady year on year growth in turnover from £15.3 billion in 2008 to £18.7 billion in 2014.¹ For example, anaerobic digestion activities produced nearly 1.5TWh (terawatt hours) of electricity in 2013. This is set to rise to a potential 3 to 5TWh by 2020, under the Government’s Anaerobic Digestion Strategy.

The waste industry in England holds over 11,000 Environmental Permitting Regulations (EPR) permits issued by the Environment Agency; 81% of all EPR permits issued. Sites can hold more than one permit.

The number of permitted waste facilities increased by 2% between 2014 and 2015. There has been a 21% increase in the number of permitted waste facilities since 2010. The increases are mostly in the waste treatment and biowaste sectors. Simple waste registrations increased significantly in 2013 because the transitional requirements for agricultural exemptions ended and many farmers registered new simple waste registrations in the middle of that year.

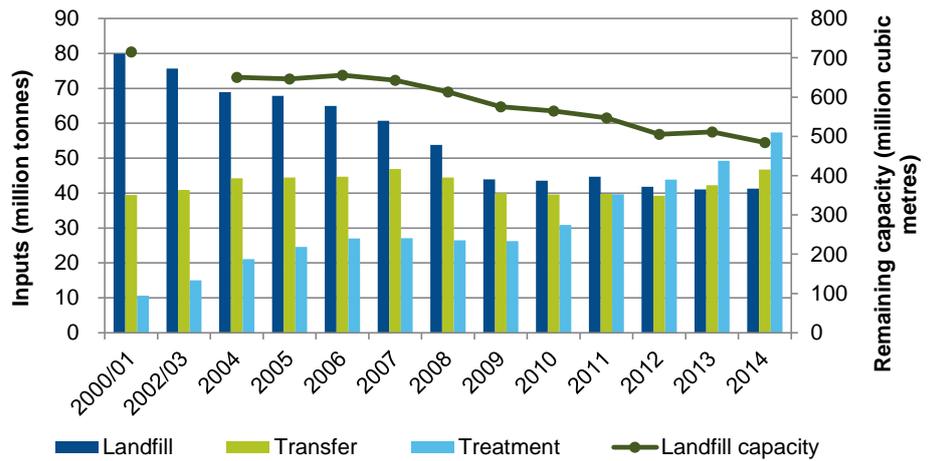


¹ See 'Data is for waste collection, treatment and disposal activities and materials recovery', Office for National Statistics 2016. UK non-financial business economy – 2014 revised results. (www.ons.gov.uk/ons/rel/abs/annual-business-survey/index.html).

The changing picture of waste management

In recent years, more waste has been re-used and recycled, and less landfilled.² Tax on landfilled waste was introduced in 1996 as a method of reducing the amount of waste sent to landfill sites. It was intended to encourage waste producers to use more sustainable waste management methods, such as recycling or composting. Restrictions on the landfilling of certain wastes also contributed to this changing picture.

Waste management in England, 2000/01 to 2014

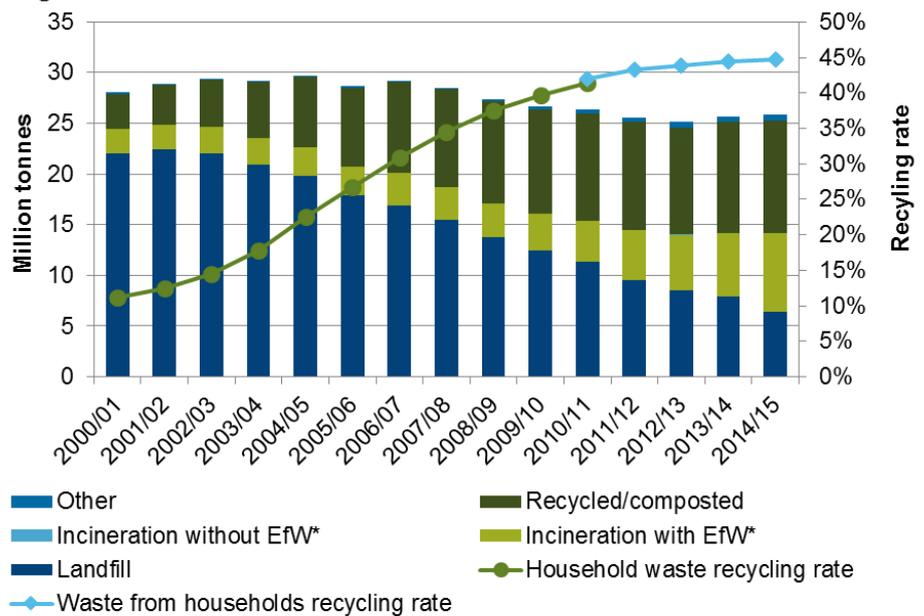


Permitted sites (all sectors) recovered 65% of their waste in 2015, compared to 39% in 2000, and 64% in 2014. The amount of waste sent to landfill from these sites increased from 14% in 2014 to 17% in 2015. In 2015, 18% of waste from these sites was deposited on land as part of a recovery operation.

For wastes managed by local councils in England:

- the waste from households recycling rate reached nearly 45% in the year 2014 to 2015,³ the highest on record
- waste to landfill has decreased by 71% since 2000 to 2001 (from 22 million tonnes to 6.4 million tonnes in 2014 to 2015), while the amount incinerated for energy recovery has more than tripled over the same period (2.4 million tonnes in 2000 to 2001 to 7.8 million tonnes in 2014 to 2015)⁴

Local council managed waste and recycling rates in England



Data from Defra National Statistics.
 'Waste from households' excludes waste from street bins, street sweepings, parks and grounds waste that was previously included in 'household waste.'
 * EFW means energy from waste and is also known as IER (incineration with energy recovery)

² See 'Waste management for England 2015' (www.gov.uk/government/statistics/waste-management-for-england-2014). 2015 data will be available in September 2016.
³ See 'Defra National Statistics: Statistics on waste managed by local authorities in England in 2014 to 2015' (www.gov.uk/government/uploads/system/uploads/attachment_data/file/481771/Stats_Nov_2015.pdf).
⁴ See 'Defra National Statistics: Local authority collected waste generation April 2000 to March 2015 Table 2a. (www.gov.uk/government/uploads/system/uploads/attachment_data/file/481060/LA_and_Regional_spreadsheet_2014-15_publication.ods).

- the amount of household waste recycled, composted (including anaerobic digestion) and re-used has increased; more than 3 times as much in 2014 to 2015 (11 million tonnes) as in 2000 to 2001 (3.4 million tonnes)⁴
- about 42% of the recycling of waste from households in 2014 to 2015 was organic waste consisting of separately collected food waste and other organics such as garden waste⁵

Exports of refuse derived fuel (RDF) from the UK continue to increase. Almost 2.8 million tonnes of RDF was shipped from England in 2015, compared to 2.4 million tonnes from England and Wales in 2014, and only 0.01 million tonnes in 2010. The market is driven by high landfill tax rates and limited capacity to process the waste in the UK. Recycling rates have increased in parts of Europe that traditionally relied on incineration. This has left operators struggling to find sufficient fuel from local resources.⁶

More waste is being used as a resource. To promote this, quality protocols issued by the Environment Agency explain when a waste derived material can be regarded as a non-waste product. The protocols aim to provide increased market confidence in order to encourage greater recovery and recycling. They allow businesses to reduce disposal costs and generate revenue from waste where it can be used to create quality new products. Since the waste protocols programme started in 2007, quality protocols have diverted over 61 million tonnes of material from landfill and have saved businesses around £466 million. For example, by avoiding landfill costs and removing regulatory fees. By 2020 quality protocols could help businesses save, on average, £122 million a year through reduced waste management costs and generate a further £495 million a year through the sale of this resource.

Environmental consequences

Pollution incidents

We classify pollution incidents 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. This section is about the most serious pollution incidents, categories 1 and 2. It makes a distinction between sites or activities we regulate under the Environmental Permitting Regulations 2010 (EPR), referred to in the summary as permitted sites or activities, and those that we don't. The activities of some of the industries and businesses that we don't permit under EPR will be regulated under other legislation. For example, activities may be regulated under the Water Resources Act or monitored under the Water Framework Directive.

In 2015, 34% of serious pollution incidents (170 of 499) were caused by activities with permits. Non-permitted activities caused 283 incidents (57%) and 46 incidents (9%) were caused by unidentified sources.

Waste management activities, which collectively includes the sectors waste treatment (all sub sectors), landfill, biowaste (treatment and use) and incineration with energy recovery, caused 94 serious incidents in 2015, 55% of the total caused by activities with permits. This was 36% fewer than in 2014 (148 incidents).

Factors contributing to pollution incidents at waste sites include poor management, design or maintenance. In particular, amounts of waste being treated on a site in excess of the site capacity, or involving poor storage arrangements, can cause problems.

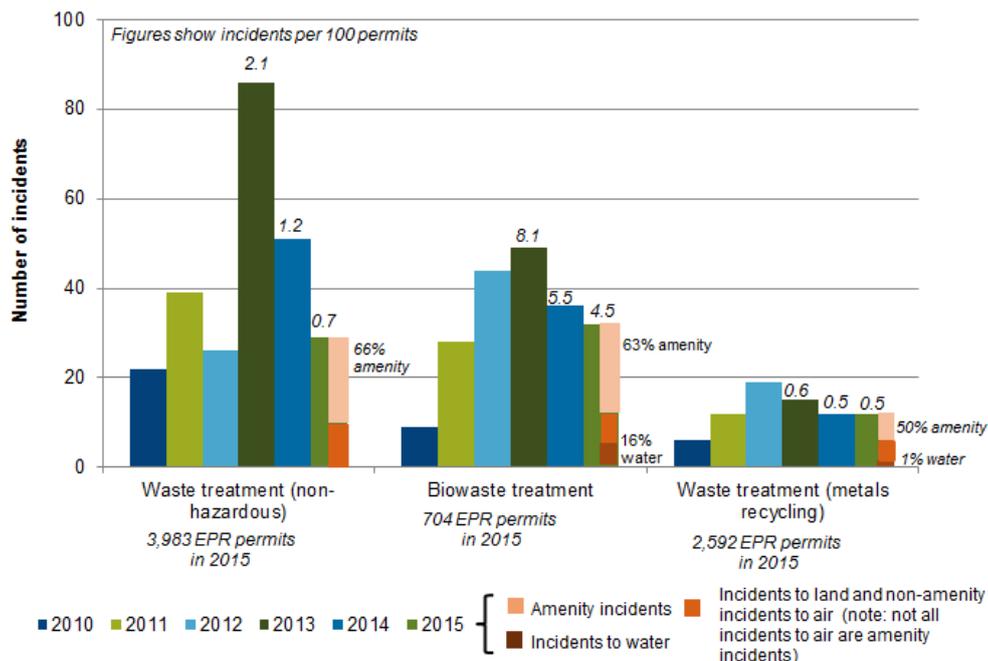
⁵ See 'Defra National Statistics: Statistics on waste managed by local authorities in England in 2014-2015', (www.gov.uk/government/uploads/system/uploads/attachment_data/file/481771/Stats_Note_Nov_2015.pdf).

⁶ See 'ENDS' (<http://www.endswasteandbioenergy.com/article/1391072/rdf-exports-hit-new-record>).

In 2015 there was;

- a 43% decrease in incidents caused by the non-hazardous waste treatment sector
- an 11% decrease in incidents caused by the biowaste treatment sector
- no change in the number caused by the waste treatment (metals recycling) sector

Serious pollution incidents: top 3 waste sectors in England



Of the serious incidents affecting air caused by activities with permits, 87% (60 of 69) involved the amenity pollutants odour, smoke, dust or noise. Waste management activities caused 59 of these 60 amenity-related incidents.

Of the 60 amenity incidents:

- 34 (57%) were odour related, of which 33 (97%) were caused by the waste industry
- 13 were noise-related
- 8 were smoke-related
- 6 were dust-related

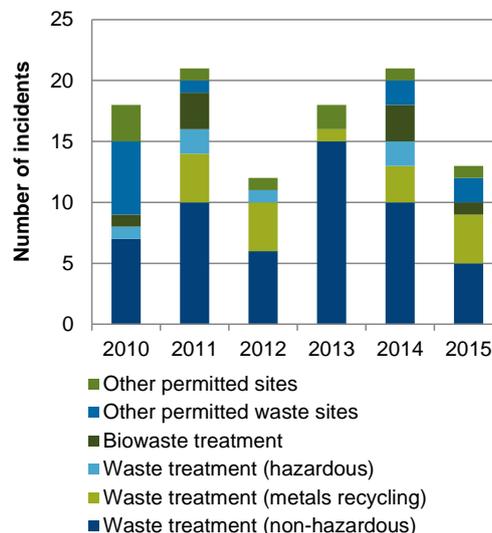
Note: the individual numbers here add up to more than 60 because one incident may have more than one pollutant associated with it.

We have been focussing regulatory efforts on amenity-related issues, such as odour and noise. We have identified problematic sites to help resolve these issues. There were substantial reductions in odour and noise complaints in 2014 and 2015; 65% fewer odour-related incidents and 28% fewer noise-related incidents in 2015 than in 2014.

In 2015, 73% (69) of the serious pollution incidents caused by waste management activities with permits were at sites with a poor record of compliance (having an Opra compliance rating of D, E or F).

Waste fires have had a high profile over the last few years following several incidents that involved large volumes of waste, and large fires that burned for prolonged periods giving rise to air and water pollution. There is no clear trend in the numbers of serious pollution incidents caused by fires on waste sites. In 2015 we introduced new fire prevention plan guidance for sites storing combustible waste.

Serious pollution incidents caused by fires at industrial sites with permits, in England



Recent research has found that over 1,200 historic coastal landfill sites (these are former landfills that no longer hold a permit) in England and Wales are vulnerable to erosion and flooding from the sea. While these sites are not currently eroding, the study shows that in the event of erosion, there could be serious environmental consequences due to the level of contaminants that could pollute the surrounding protected ecological sites. Work is ongoing to identify which sites present the most risk.⁷

Sites of high public interest

At the end of 2015, 14 permitted sites were designated as 'sites of high public interest' (sites that concern local communities), compared with 30 at the end of 2014. Of the 14:

- 6 were in the waste treatment (non-hazardous) sector
- 3 were in the landfill sector (all of which were landfill sites that accept non-hazardous waste)
- 3 were in the biowaste treatment sector
- 2 were in the incineration and energy recovery sector

This decrease in the number of sites was due to us focussing our regulatory efforts on tackling some of the long-standing issues, particularly relating to odour and noise. Pollution incident data shows a dramatic reduction in odour and noise complaints for a number of high profile sites. All of the sites of high public interest at the end of 2015 were in the waste industry; 64% (9) of those had a poor permit compliance rating (D, E or F).

Releases to air

In 2015 the landfill sites that we permit released 194,000 tonnes of methane to the air (89% of all methane emissions reported from the sites we permit). This is about 14% of total methane emissions in England, based on 2014 data from the National Atmospheric Emissions Inventory. The sector's methane emissions decreased by 1% between 2014 and 2015 and by 61% since 2002. Almost 783,000 tonnes of methane was collected and combusted in engines and flares at landfills in England in 2015. Of this, 91% was combusted in engines to generate electricity. In 2014, 8% of electricity generated in the UK from renewable energy sources came from landfill gas.⁸

Waste crime

Waste crime diverts up to £1 billion from legitimate business and Her Majesty's Treasury each year.⁹ In April 2015 we received £4.2 million from the Landfill Communities Fund to extend and develop our work on waste crime in 2015 to 2016. This is in addition to the £5 million we received in 2014 for the following 2 years. We set up a programme of 13 projects with this money which either supplemented our existing activities, bringing in extra staff to assist our operational teams, or allowed us to take stock of a number of key activities in the waste sector. In particular we're tackling illegal waste sites, illegal waste exports, poorly performing sites and those who mis-describe waste to evade taxation. We are also investing in the way we gather and share intelligence and investigating sites for inappropriate wastes being spread to

⁷ See 'Queen Mary University of London' (www.qmul.ac.uk/media/news/items/hss/176675.html).

⁸ See 'DECC, 2015. Digest of United Kingdom Energy Statistics' (www.gov.uk/government/statistics/renewable-sources-of-energy-chapter-6-digest-of-united-kingdom-energy-statistics-dukes).

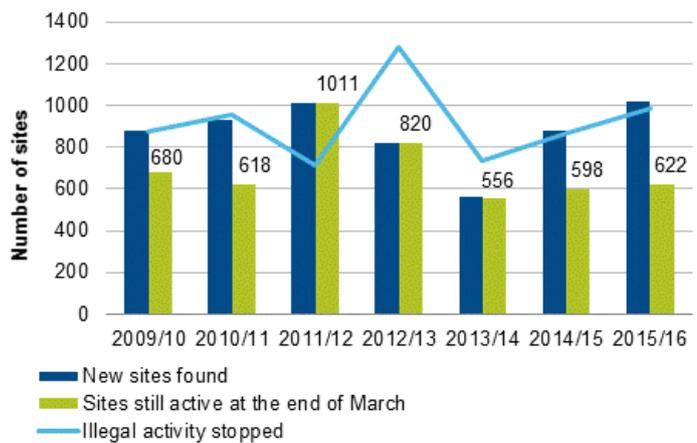
⁹ See 'Environmental Services Association Education Trust. Waste Crime: Tackling Britain's Dirty Secret' (www.esauk.org/esa_reports/ESAET_Waste_Crime_Tackling_Britains_Dirty_Secret_LIVE.pdf).

land, going to landfill or for treatment. The programme has helped us to secure longer term funding of £23 million to the year 2019 to 2020, largely from the Landfill Communities Fund.

Between April 2015 and March 2016 we spent almost £15 million stopping illegal waste activity, with an estimated return of £83 million.¹⁰

Sites are illegal if they don't have a permit when they should, or don't meet other legal requirements. We found over 1,000 new illegal waste sites in the year 2015 to 2016 and stopped illegal waste activity at 989 sites. At the end of March 2016, 622 illegal waste sites were still active. Of the illegal waste sites where we stopped activity, 7% (73 of 989) brought their activities into regulation in 2015 to 2016. We have a target to stop illegal activity at 45% of newly discovered illegal waste sites within 90 days. During 2015 to 2016 we nationally exceeded this target and stopped illegal activity at more than 50% of new sites within 90 days.

Illegal waste sites in England, 2009/10 to 2015/16

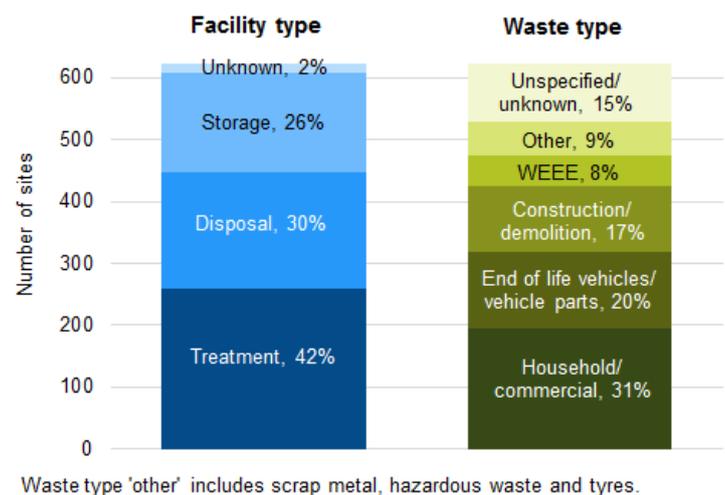


We classify some illegal waste sites as high risk. These are the sites that pose the most significant threat to the environment, human health or may be connected to organised crime. We stopped illegal waste activity at 304 high risk illegal waste sites in 2015 to 2016; 31% of all sites stopped. At the end of March 2016, 273 high risk illegal waste sites were still active; 44% of all active sites.

The activities carried out at illegal sites include:

- storing waste
- treating waste, for example composting or recycling
- disposal activities, for example burning, spreading or landfilling

Facility and waste type at active illegal waste sites, March 2016



The resulting dust, odour and smoke can have a detrimental impact on a community.

The top 3 types of waste found at illegal sites in 2015 to 2016 were household and commercial waste, end-of-life vehicles and construction and demolition waste. These waste types made up more than two-thirds of the waste types found on sites still active in March 2016.

We are increasingly using new approaches, designed to disrupt illegal activity, rather than spending time investigating and prosecuting, although we will always prosecute in appropriate cases. These approaches include signage, physical barriers and making those who deliver waste to such sites aware that they too are committing offences. We will build on this approach in 2016. In 2015 to 2016, we dealt with 125 large, serious and organised illegal dumping of waste incidents, the majority of which involved household and commercial waste (30%), chemical drums, oil or fuel (21%) or construction, demolition and excavation waste (18%).

¹⁰ See 'Environmental Services Association Education Trust. Waste Crime: Tackling Britain's Dirty Secret' (www.esauk.org/esa_reports/ESAET_Waste_Crime_Tackling_Britains_Dirty_Secret_LIVE.pdf).

Illegal exports have been a priority for us for the past 2 years. We have improved the quality and quantity of our criminal intelligence and increased the number of inspections at sites suspected of illegal waste exports and shipping containers prior to export. In 2015 to 2016 we inspected 1,388 containers prior to export, compared with 167 in 2012 to 2013. We have estimated that, as a result of our interventions, the amount of illegally exported electrical and household waste from England fell by 17% between 2014 and 2016, from 206,000 to 171,000 tonnes. This reduction in illegal exports saved the UK economy £2.75 million over the 2 years; the result of otherwise illegally exported waste going through UK waste treatment facilities. Despite the decline in illegal exports, offender behaviour continues to evolve and pose challenges to the prevention and detection of illegal waste exports.

An estimated £160 million per year of tax revenue is lost due to waste operators incorrectly describing their waste in order to pay the lower rate of landfill tax.¹¹ Our investigations into the mis-description of waste have uncovered fraud and links to organised crime groups.

Environmental performance of the waste industry

The majority (96%) of permits in the waste industry (waste treatment, biowaste, landfill and incineration and energy recovery sectors) were in bands A, B or C for environmental permit compliance in 2015 - 4% had poorer compliance with permit conditions (D, E, or F band).¹² Of all D, E or F rated sites, 92% were in the waste industry. The number of waste industry permits rated poor for compliance fell from 531 in 2014 to 425 in 2015. This decrease is due to us revoking more permits and focussing effort on tackling some of the longstanding issues, for example odour and noise.

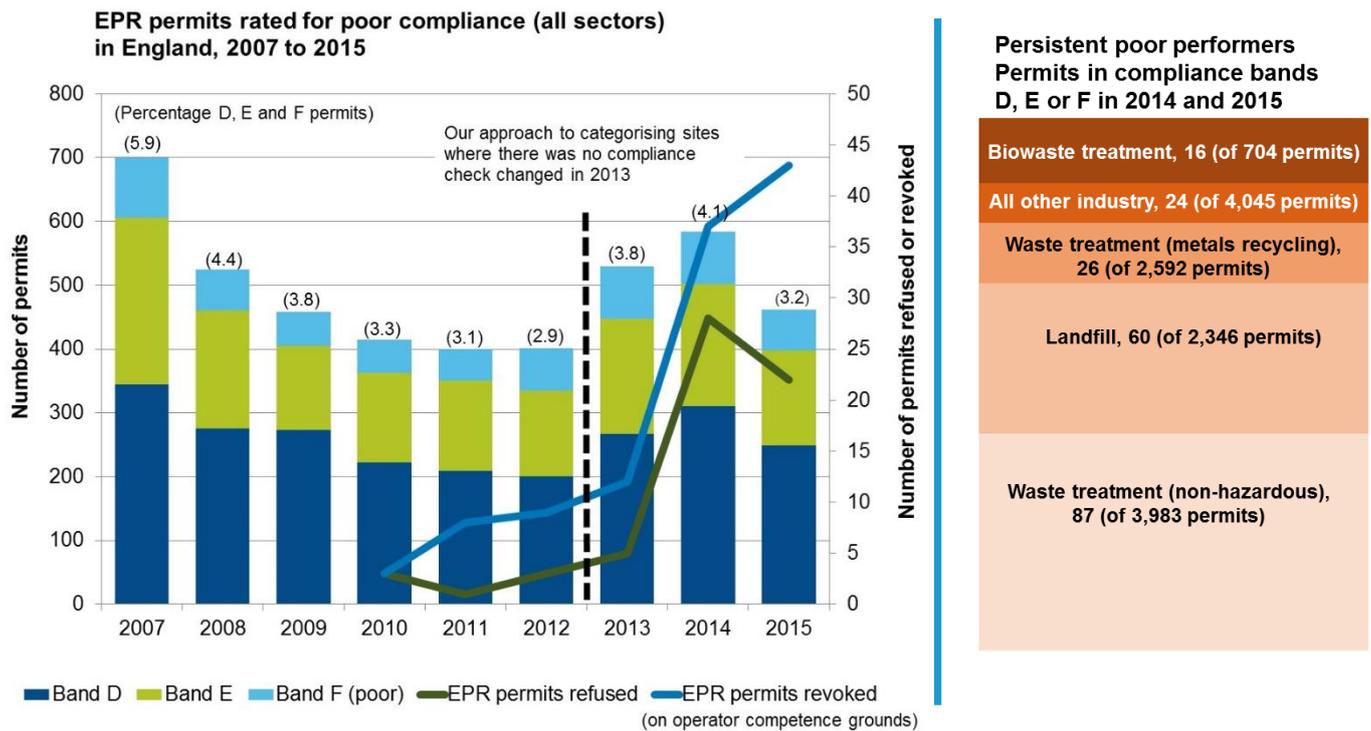
In 2015, the proportion of permits rated D, E, or F within each of the waste sectors was:

- biowaste treatment; 6% (41 of 704) and biowaste use; 3% (11 of 440)
- landfill; 5% (106 of 2,346 permits)
 - 67% (71) of landfill permits in bands D, E or F were at sites that accept non-hazardous waste
 - 13% (14) were at sites that accept inert waste
 - 12% (13) were at sites for the deposit of waste for recovery (where waste is recovered through depositing it on land, rather than a beneficial use through application of waste to land - these sites were previously included in the non-hazardous and inert landfill subsectors)
 - 8% (8) were sites that accept hazardous waste
- waste treatment; 3% (260 of 7,845 permits)
 - 68% (176) of waste treatment permits in bands D, E or F were in the non-hazardous waste treatment sector
 - 27% (70) were in the metals recycling waste treatment sector
 - 3% (8) were in the hazardous waste treatment sector

¹¹ See 'Environmental Services Association Education Trust. Waste Crime: Tackling Britain's Dirty Secret' (www.esauk.org/esa_reports/ESAET_Waste_Crime_Tackling_Britains_Dirty_Secret_LIVE.pdf).

¹² See 'Operational Risk Appraisal (Opra)'. In 2013 we changed our approach to categorising sites where there was no compliance check. We are assessing the impact of this change. (www.gov.uk/government/collections/operational-risk-appraisal-opra).

- 2% (6) were in the inert waste treatment sector
- incineration and energy recovery; 5% (7 of 139 permits)



Between 2014 and 2015 there was an overall decrease of 6% (from 217 to 203) in the number of persistent poor performers carrying out waste activities. This included a decrease in the non-hazardous waste treatment sector (from 109 to 87). There was an increase in the number of persistent poor performers in the landfill sector (from 52 to 60) and in the waste treatment metals recycling sector (from 17 to 26).

Our main reasons for refusing or revoking permits are linked to operator competence demonstrated by their current and past performance. We are applying more stringent checks when issuing permits for waste sites to prevent poorly qualified individuals from becoming permitted operators. There was a fundamental change to our guidance in 2013, expanding our abilities to refuse/ revoke to include poor compliance, inadequate management system, inadequate technical competence and/or inadequate financial competence.

Addressing poor performance: enforcement main facts

We will prosecute serious or persistent offenders, but there are other enforcement actions we may take. These include cautions, enforcement notices and civil sanctions (most commonly enforcement undertakings). Cautions are intended to deter offenders, and suitable for cases where, although we could prosecute, there are other factors that we take into account. Enforcement notices are used to bring sites we permit back into compliance and put right any damage caused to the environment. Civil sanctions are used to change offenders' behaviour by paying to clean up the damage caused and improve the environment, rather than paying fines.

We brought 70 prosecutions against companies for environmental offences in 2015; 14% fewer than in 2014 (81 company prosecutions), 54 of these were waste companies compared to 37 in 2014. Many of these prosecutions were for multiple offences.

Fines imposed as a result of our prosecution of companies involved in waste activities:

- represented 19% of the total fines imposed for company prosecutions in 2015 (£3.6 million), compared to 12% in 2014
- totalled just over £707,000 in 2015; an 85% increase from 2014 (£383,000)

This is the result of a greater number of offences being brought to prosecution (108 in 2015 compared to 51 in 2014) and a 26% increase in the average fine per prosecution. Just over half of the companies involved in waste activities we brought prosecutions against in 2015 were permitted, accounting for 61% of total fines for waste companies (£433,000).

Across all the sectors, the average fine per prosecution increased by 30% between 2014 and 2015 (from £40,000 to £52,000).

Guidelines on the sentencing of environmental offences were issued to criminal courts in 2014 by the Sentencing Council. For the first time, a tariff has been provided to indicate the right level of penalties dependent upon the seriousness of the offence and the turnover and profit of the organisation involved. The sentencing guideline has had a marked impact on sentencing of waste offences and in very many cases this has meant an increase in the fine which might otherwise have been imposed by the court. It has led to an increase in the number of Newton Hearings where guilt is admitted, but issues as to the extent of culpability or harm are considered in detail by the court.

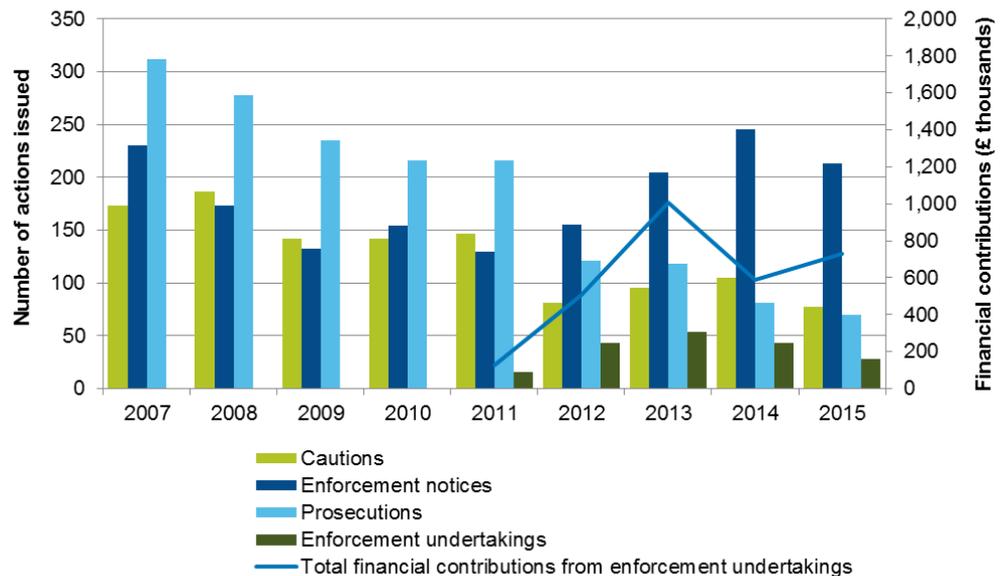
The highest fine given to a registered company for waste offences in 2015 was £100,000. The highest for an individual was £120,000. Five people received prison sentences for waste offences in 2015. The longest sentence was for 18 months. One individual received a 12-month sentence for failing to make any contribution towards a Proceeds of Crime Order imposed to compensate the victims of their previous offending.

We issued over 200 enforcement notices to companies involved in waste activities in 2015. Almost 90% of these were to companies that we permit. Companies in the non-hazardous waste treatment sector received over half of all enforcement notices issued to companies. In 2015, 77% of companies receiving more than one caution or enforcement notice were involved in waste activities, compared to 64% in 2014.

During 2015 we accepted 28 enforcement undertakings from businesses compared to 43 in 2014. Most enforcement undertakings (22 of 28) were related to packaging waste offences, resulting in contributions of £693,000 to environmental charities, organisations or projects.

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Enforcement actions used for environmental offences* by registered companies (all sectors) in England, 2007 to 2015



*Environmental offences for the purpose of this analysis are waste, water quality and emissions offences