

# Waste Data Digest 8: Key facts and trends

Published 2008





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# Introduction

Welcome to SEPA's new booklet *Waste Data Digest: Key facts and trends*.

SEPA has produced an annual *Waste Data Digest* since 2001. It deals with data collected by, or on behalf of, SEPA on controlled waste in Scotland. A review in 2008 resulted in the creation of a new format for the digest where it is published in two parts:

- *Waste Data Digest: Key facts and trends* – an A5-sized booklet with tables, graphs and text dealing with high-level facts and trends.
- *Waste Data Digest: Data Tables* – Online excel tables presenting detailed data on municipal, commercial and industrial wastes.

*Key facts and trends* focuses on 20 key topics and examines trends over time. The booklet is divided into three sections: arisings, recovery and disposal, and includes data on municipal, as well as on commercial and industrial wastes. For most topics, the trends span five years, but for some only three years worth of data is available. The latest data reported covers the calendar year 2006. However, in some instances, only financial year information is available and this is reported for 2006/2007.

The new booklet together with previous Waste Data Digests are available in PDF format on SEPA's website: [www.sepa.org.uk/waste/waste\\_data.aspx](http://www.sepa.org.uk/waste/waste_data.aspx)

*Waste Data Digest: Data Tables* and the tables from previous digests are available in Excel format on SEPA's website: [www.sepa.org.uk/waste/waste\\_data.aspx](http://www.sepa.org.uk/waste/waste_data.aspx)

This new two-part format will allow the data to be made available more quickly than in previous years. The initial range of information will follow that of previous digests, however this is expected to alter over time to reflect customers' changing needs. Providing the data in Excel format will also allow customers to use them for their own purposes.

The next *Key facts and trends* booklet reporting 2007 and 2007/2008 waste data is due to be published in spring 2009.



# Important information

These notes are provided in order to help you understand the booklet better.

## Definition of municipal waste

The definition of municipal waste has changed in recent years. To allow meaningful conclusions to be drawn on trends in municipal waste it has been necessary to rework data from previous years to match the new definition. As a result, tonnages in this booklet may differ from those in the equivalent *Waste Data Digest*. The tonnages in the *Waste Data Digests* are correct according to the definition that existed at the time.

The current definition is set out in the *Landfill Allowance Scheme (Scotland) Regulations 2005, Scottish Executive Guidance: March 2007*. Collected municipal waste is all waste for which the councils make arrangements, with the exception of, among others: abandoned vehicles; road maintenance waste; commercial waste that is delivered to local authority owned or run landfill sites where the local authority has no part in the collection arrangements that have led to this delivery; industrial waste collected from industrial premises and taken for disposal or treatment separately from any other waste; and construction and demolition waste that is collected and taken for disposal or treatment separately from any other waste. Bricks and rubble taken to civic amenity sites must be included in collected municipal waste.

## Lists of waste management sites

The lists of waste management facilities that appeared in previous years in the printed digests will now only be made available on SEPA's website.

## Reporting years

Normally data are reported by calendar year but in some instances only financial year data are available. The financial year runs from 1 April to 31 March and is shown as, for example, 2006/07.

## Rounding

Please note that where the sum of the figures in a table does not equal the total this is due to rounding.

## Scottish Executive

The Scottish Executive was established in 1999 and since August 2007 has been officially referred to as the Scottish Government. Throughout the booklet where reference is made to the Scottish Executive the term 'the (then) Scottish Executive' is used.

## Updates

Some data tables have been updated since they were originally published in the *Waste Data Digest* to provide more accurate data.



## Total controlled waste arisings in Scotland 2004/05 - 2006/07



Million tonnes

Waste type	2004/05	2005/06	2006/07
Household	2.80	2.89	3.00
Commercial	6.39	6.38	5.07
Industrial – other	2.57	2.35	2.71
Industrial – C&D	7.30	10.60	11.80
<b>Total</b>	<b>19.06</b>	<b>22.22</b>	<b>22.58</b>

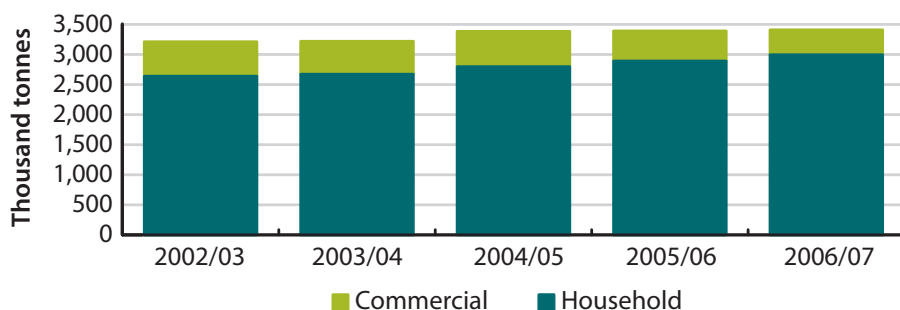
The total controlled waste arisings for Scotland increased by 18% between 2004/05 and 2006/07.

The most significant change was in construction and demolition waste, which increased by 62% from 7.3 million tonnes in 2004/05 to 11.8 million tonnes in 2006/07. The growth in household waste arisings was fairly consistent, with an increase of 3.2% between 2004/05 and 2005/06 and a 3.8% increase between 2005/06 and 2006/07. There was a 21% decrease in commercial waste arisings from 2004/05 to 2006/07.

Controlled wastes are all wastes as defined by the Environmental Protection Act 1990, section 75. SEPA collects waste data by a variety of means. WasteDataFlow is used for municipal waste data reporting. Commercial and industrial waste data are obtained from quarterly returns from all licensed/permitted waste management sites, special waste consignment notes, and annual returns from certain activities exempt from waste management licensing. SEPA has also carried out two national business waste surveys and has published a number of reports for selected waste streams and industry sectors.



## Municipal waste collected in Scotland 2002/03 - 2006/07



	Tonnes				
Waste type	2002/03	2003/04	2004/05	2005/06	2006/07
Household	2,639,042	2,672,039	2,797,423	2,890,956	2,995,116
Commercial*	572,419	547,108	587,272	500,106	414,062
Other non household*	30,130	62,473	24,166	23,919	27,856
<b>Total</b>	<b>3,241,591</b>	<b>3,281,620</b>	<b>3,408,861</b>	<b>3,414,981</b>	<b>3,437,034</b>

\* Includes mixed industrial.

Between 2002/03 and 2006/07 there was an average annual growth of 1.5% in municipal waste arisings. This equates to an increase of 195,000 tonnes (6%) over this time.

There was an unexpectedly large increase of 3.9% in waste collected between 2003/04 and 2004/05. No specific reasons have been identified for this, although it does coincide with the pilot reporting year for the Landfill Allowance Scheme which may have resulted in better reporting. If this increase is ignored then the current annual growth appears to be in the range 0.5% to 1%. Projecting annual growth rates of 0.5%, 1% and 1.5% forward to 2019/20, municipal waste would then be 3.67, 3.91, and 4.17 million tonnes respectively. This produces a difference of 0.5 million tonnes between the highest and lowest estimates.

The (then) Scottish Executive set a target that the growth in municipal waste should cease by 2010. This was restated by the Scottish Government as part of its plans for a zero waste Scotland.

Municipal waste is all waste for which a local authority makes arrangements. Certain exceptions are defined in the *Landfill Allowance Scheme (Scotland) Regulations 2005*, *Scottish Executive Guidance: March 2007*.

## Municipal waste collected in Scotland for disposal 2002/03 – 2006/07



Waste type	Tonnes				
	2002/03	2003/04	2004/05	2005/06	2006/07
Household	2,432,876	2,341,643	2,275,611	2,093,922	2,166,983
Commercial	546,400	493,530	489,189	394,648	318,268
Other non household*	30,130	62,473	24,166	23,919	27,856
<b>Total</b>	<b>3,009,406</b>	<b>2,897,646</b>	<b>2,788,966</b>	<b>2,512,489</b>	<b>2,513,107</b>

\* Includes mixed industrial.

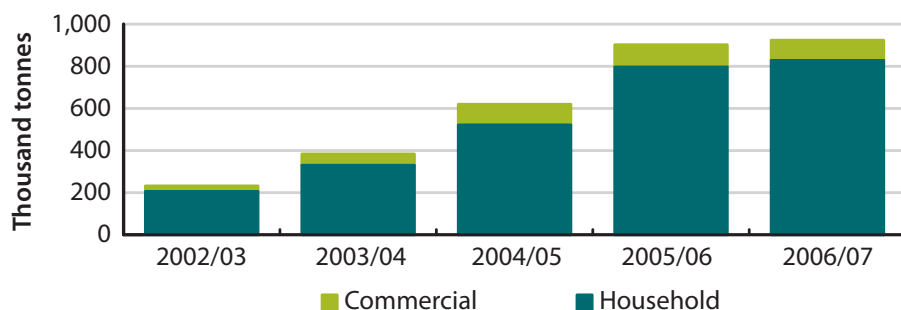
The quantity of municipal waste collected for disposal by Scottish local authorities showed a general downward trend between 2002/03 and 2006/07, with an overall reduction of 16.5% during this period.

For household waste the reduction was 11% and for commercial waste 42%. The decrease in household waste collected for disposal can be largely explained by an increase in the recycling of materials. The decrease in commercial waste collected for disposal is harder to explain as there is no corresponding increase in the quantity recycled.

Some local authorities could only provide estimates for the quantity of commercial waste collected. In some other cases they were unable to do this and all wastes had to be considered as household. This resulted in an apparent rise in household waste with a corresponding apparent drop in commercial waste. In addition to this, some local authorities introduced tighter restrictions and stronger enforcement at recycling centres to reduce the amount of commercial waste deposited.

Waste collected for disposal may differ from the quantity actually disposed of. This is because some waste collected for disposal may be recycled or composted and some waste collected for recycling or composting may be disposed of.

## Municipal waste collected in Scotland for recycling and composting 2002/03 – 2006/07



	Tonnes				
Waste type	2002/03	2003/04	2004/05	2005/06	2006/07
Household	206,166	330,396	521,812	797,034	828,133
Commercial*	26,019	53,578	98,083	105,458	95,794
<b>Total</b>	<b>232,185</b>	<b>383,974</b>	<b>619,895</b>	<b>902,492</b>	<b>923,926</b>

\* Includes mixed industrial.

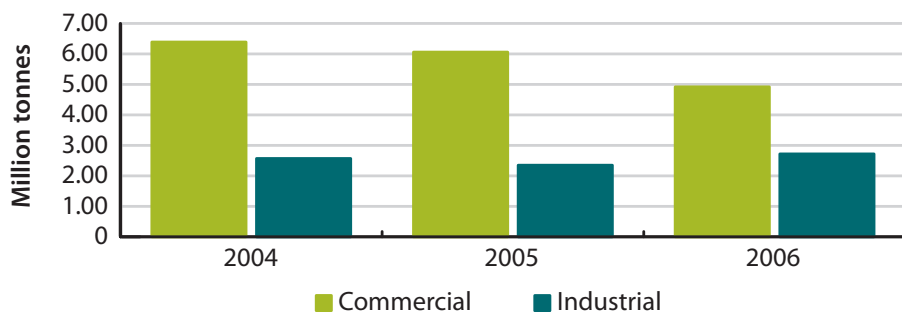
The quantity of municipal waste collected for recycling and composting by Scottish local authorities increased by 298% between 2002/03 and 2006/07. For household waste the increase was 301% and for commercial waste it was 268%. However, the quantity of commercial waste collected was less in 2006/07 than in both 2004/05 and 2005/06. The decrease between 2005/06 and 2006/07 was about 9,500 tonnes (9%).

The increase in household recycling and composting was due mainly to the diversion of materials that would have previously been disposed of. The drop in the commercial waste collected between 2005/06 and 2006/07 is thought to be due to an increasing number of local authorities that were unable to estimate the quantity of commercial waste they collected. In these cases the total amount had to be reported as household. In addition, some local authorities introduced tighter restrictions and stronger enforcement at recycling centres to reduce the amount of commercial waste deposited.

The rise in recycling and composting has been driven by the need to meet the targets set by the (then) Scottish Executive and the Scottish Government.

Waste collected for recycling and composting may differ from the quantity actually recycled or composted. This is because some waste collected for recycling or composting may be disposed of and some waste collected for disposal may be recycled or composted.

## Business waste produced in Scotland 2004 – 2006



Waste type	Million tonnes		
	2004	2005	2006
Commercial	6.39	6.06	4.92
Industrial*	2.57	2.35	2.72
<b>Total</b>	<b>8.96</b>	<b>8.41</b>	<b>7.64</b>

\* Does not include waste from construction sector.

Business waste produced in Scotland decreased from 8.96 million tonnes in 2004 to 7.64 million tonnes in 2006, a drop of 15%.

Commercial waste fell from 6.39 million tonnes in 2004 to 4.92 million tonnes in 2006; a decrease of 23%. Part of this fall can be explained by a 10% reduction in the number of companies in Scotland between 2004 and 2006.

Industrial waste was reasonably stable over these years at about 2.5 million tonnes.

Business waste is the waste produced by all businesses, including public sector organisations and commercial and industrial companies, such as factories, utility and transport companies, shops, offices, hotels, restaurants, schools and hospitals.

There is no statutory requirement for commerce and industry to make data returns to SEPA on the waste they produce. To address this data gap, two national business waste surveys were carried out for 2004 and 2006. The returns were statistically analysed and grossed up to produce overall totals for Scotland. Figures for 2005 were estimated using data from the 2004 survey. The figures in the table are based on voluntary surveys of businesses. As a result of the low response rate to the surveys, the figures have a large confidence interval associated with them.

All commercial and industrial sectors were included in the surveys, with the exception of agriculture, forestry and construction in both 2004 and 2006; the fishing, and mining and quarrying sectors were excluded in 2004.



## Construction and demolition waste managed by waste facilities in Scotland 2004 – 2006



	Million tonnes		
Site type	2004	2005	2006
Licensed/permitted	5.19	6.41	6.01
Exempt activities	2.11	4.19	5.79
<b>Total</b>	<b>7.31</b>	<b>10.61</b>	<b>11.80</b>

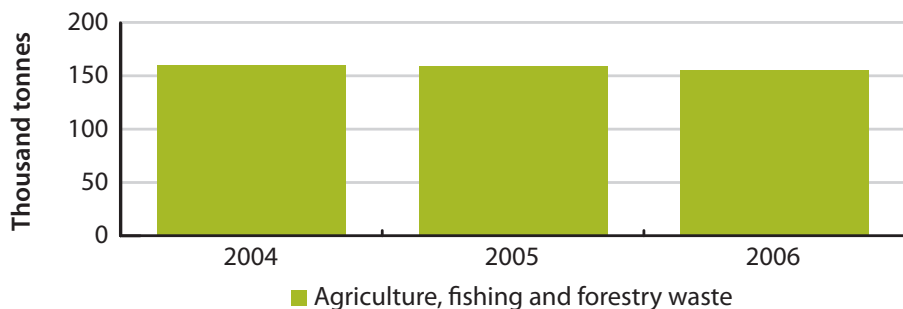
Construction and demolition waste increased by 61% to 11.8 million tonnes between 2004 and 2006. The predominant waste type for all years was non-hazardous mineral waste, including mixed construction and demolition wastes, which accounted for 8.7 million tonnes in 2006.

Much of the increase was due to a very large rise in the quantity managed by exempt activities. The waste managed rose from 2.11 million tonnes in 2004 to 5.79 million tonnes in 2006; an increase of 174%. A number of factors could have contributed to this rise: an increase in the quantity of construction and demolition waste arising, more exempt sites registering, more waste being managed by exempt activities rather than at licensed/permitted sites, and more robust data analysis.

Construction and demolition wastes typically include soils, concrete, bricks, glass, wood, plasterboard, asbestos, metals and plastics. These materials are classified under Chapter 17 of the European Waste Catalogue List of Wastes.

Construction and demolition waste is managed both by licensed/permitted waste management sites and by exempt activities registered under paragraphs 9 and 19 of the Waste Management Licensing Regulations.

## Agriculture, fishing and forestry waste produced in Scotland 2004 – 2006



Waste type	Tonnes		
	2004	2005	2006
Agriculture*	151,309	150,600	147,919
Fishing†	4,994	4,786	3,770
Forestry‡	3,257	3,267	3,274
<b>Total</b>	<b>159,560</b>	<b>158,653</b>	<b>154,963</b>

\*Includes aquaculture.

†Sea fishing. Excludes fish waste disposed of at sea.

‡Excludes plant material left *in situ*.

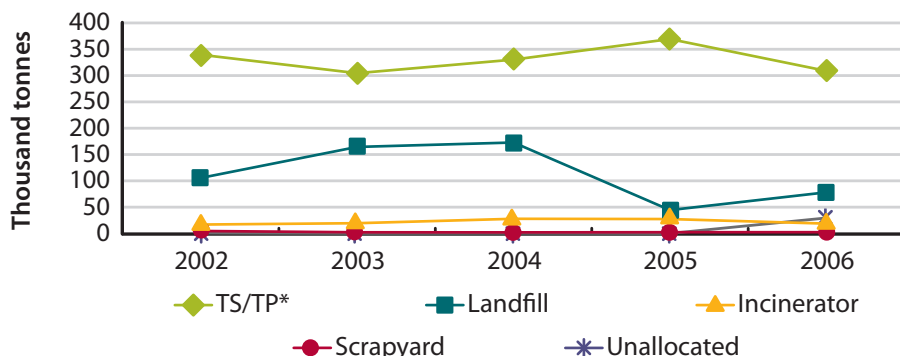
The overall tonnage of waste from the agriculture, fishing and forestry sectors in Scotland declined by 3% between 2004 and 2006.

The small decrease in agricultural waste corresponded to an overall decline in agricultural areas in Scotland and a reduction in livestock production in 2005 and 2006. Fishing waste declined by 25% from 2004 to 2006. This was linked to a reduction in number of fish landed at Scottish ports over these years. Forestry waste remained fairly constant during this period.

Data from the Scottish Agricultural Census were used to produce estimates of waste arisings from farms, based on parameters such as crop and livestock production. Wastes arising from aquaculture, which are included in agriculture, were determined from fish mortality data. Data models were used to estimate waste arising from fishing and forestry.

Agricultural wastes include packaging, plastics, redundant machinery, tyres, oils, batteries, fencing, building materials, scrap metal, unused pesticides and veterinary medicines and spent sheep dip. Fishing wastes that arise at ports usually consist of broken nets, packaging waste and waste oils. Typical wastes produced by the forestry sector are oil, batteries, chemicals, metal, packaging and general mixed wastes.

## Special waste consigned to waste management facilities in Scotland 2002 – 2006



Destination type	2002	2003	2004	2005	2006
TS/TP*	339,590	304,533	330,316	369,352	308,834
Landfill	105,482	164,417	172,832	44,425	78,185
Incinerator	16,945	19,507	27,892	27,403	18,701
Scrapyard	4,711	2,259	2,093	2,377	2,420
Unallocated†	863	203	491	99	29,490
<b>Total</b>	<b>467,591</b>	<b>490,919</b>	<b>533,624</b>	<b>443,656</b>	<b>437,630</b>

\* Transfer station/treatment plant.

† Unable to identify destination type.

In 2006 approximately 438,000 tonnes of special waste were consigned (sent) to waste management facilities in Scotland.

There was no clear trend in the quantity sent to waste management facilities between 2002 and 2006. Much of the variability can be explained by the variations in the quantity of contaminated soils managed. In 2003 and 2004 there were large construction projects that generated considerable quantities of contaminated soils.

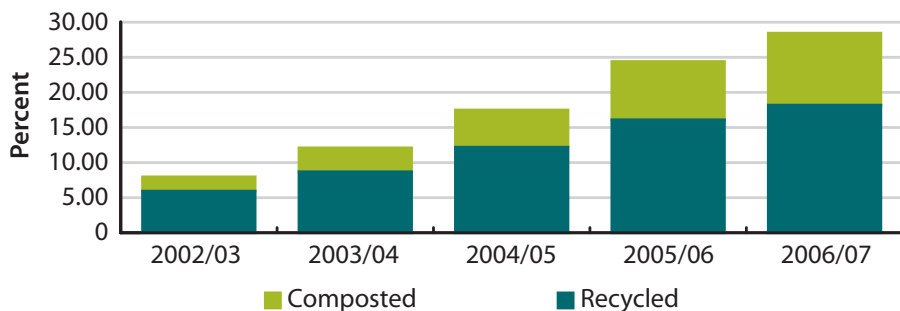
Special waste represents about 2.5% of the total waste produced annually in Scotland.

The waste managed by facilities in Scotland includes not only waste originating in Scotland, but also waste sent from England, Northern Ireland and Wales.

The quantity of waste landfilled decreased in recent years as a result of the Landfill (Scotland) Regulations 2003. A major change affecting the landfilling of special waste was the ending of co-disposal of special and non-special wastes in landfills.

Special wastes are wastes that pose particular risks to human health and the environment. They are classed as such because they have one or more hazardous characteristics or properties, such as being explosive, highly flammable, toxic or carcinogenic. In the rest of the UK they are referred to as hazardous waste.

## Municipal waste recycling and composting rates for Scotland 2002/03 – 2006/07



	Percent				
Activity	2002/03	2003/04	2004/05	2005/06	2006/07
Recycling	5.94	8.70	12.20	16.10	18.19
Composting	2.03	3.40	5.30	8.30	10.25
<b>Total</b>	<b>7.97</b>	<b>12.10</b>	<b>17.50</b>	<b>24.40</b>	<b>28.44</b>

Scotland recycled and composted 28.4% of its municipal waste in 2006/07. This was a significant increase from a recycling and composting rate of only 8% in 2002/03.

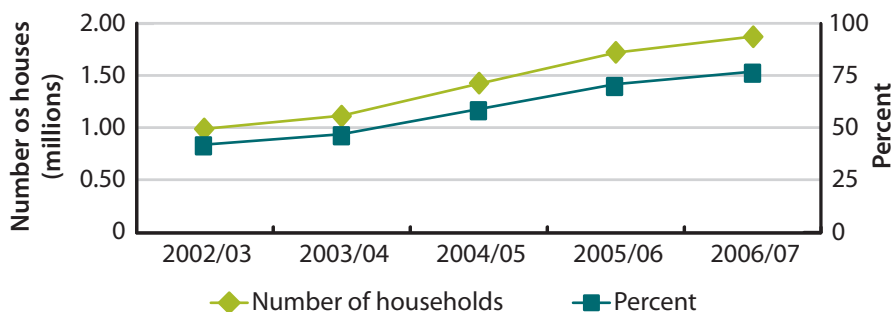
This increase reflected the work carried out by local authorities to implement their recycling and composting plans in conjunction with the National Waste Plan 2003 and the Strategic Waste Fund monies allocated by the (then) Scottish Executive. Scotland met the 25% recycling target set by the (then) Scottish Executive for 2006.

Although the recycling and composting rate continues to increase, the speed of this may be beginning to slow. The target of 30% by the end of 2008 is likely to be achieved, but that for 2010 of 40% will be challenging. Future targets set by the Scottish Government as part of its plans for a zero waste Scotland are 50% by the end of 2013, 60% by the end of 2020 and 70% by the end of 2025. The targets apply to Scotland as a whole and none have been set for individual local authorities.

SEPA calculates the recycling and composting rate in accordance with the definitions set out in the *Landfill Allowance Scheme (Scotland) Regulations 2005, Scottish Executive Guidance: March 2007*.



## Number of households receiving a kerbside recycling or composting collection in Scotland 2002/03 – 2006/07



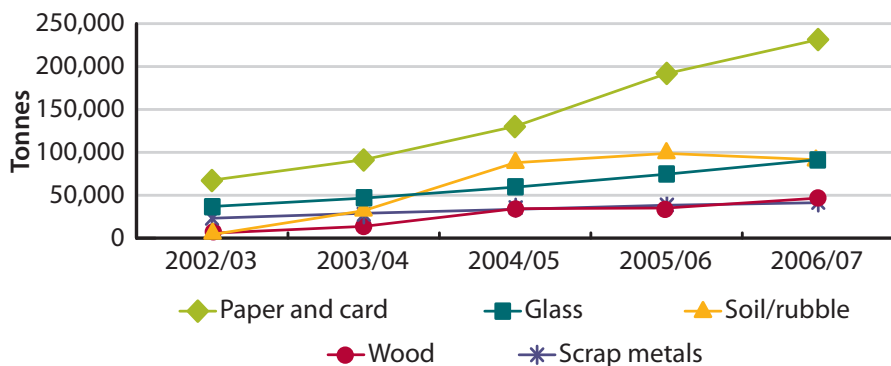
	Households				
	2002/03	2003/04	2004/05	2005/06	2006/07
Total number of households in Scotland	2,350,248	2,364,156	2,388,686	2,412,472	2,425,252
Households offered a kerbside recycling or composting collection	988,281	1,114,809	1,421,188	1,719,226	1,873,974
% of households	42	47	59	71	77

In 2006/07, over 77% (1.87 million) of Scottish households were offered a kerbside collection of one or more materials for recycling or composting. This compares with 42% (0.99 million) in 2002/03. In 2006/07 all 32 Scottish local authorities collected dry recyclables and 30 collected green waste for composting. Fifteen local authorities provided the service to more than 90% of their households.

Using the Audit Scotland classification of local authorities as rural, mixed or urban, there were considerable differences in the kerbside recycling rates of these three classes in 2006/07. On average, rural authorities offered a service to 84% of households, mixed authorities to 90% and urban authorities to 64%. In all classes at least one local authority offered 90% of households in their area a kerbside collection service with rural authorities showing the greatest variability. The principal challenge for urban authorities is the provision of effective kerbside recycling services to the large number of properties, such as tenements and high rise blocks in these areas.

Kerbside collection is only one of several means for collecting materials for recycling. The others include recycling centres and points and material reclamation facilities.

## Municipal waste recycled in Scotland – breakdown by material 2002/03 – 2006/07



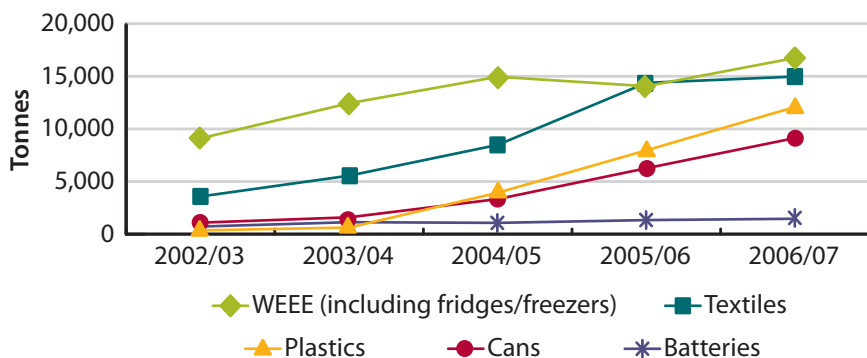
The different materials recycled by local authorities vary considerably in quantity. The graph on this page shows the five most frequently recycled materials and the one on the following page five other commonly recycled materials.

The total quantity of materials recycled by Scottish local authorities increased substantially between 2002/03 and 2006/07 and reached over 600,000 tonnes in 2006/07. The five most frequently recycled materials accounted for over 80% (502,000 tonnes) of the total recycled in 2006/07, with paper and card alone accounting for over 37% (231,000 tonnes) of this. Some materials have shown particularly high increases over the period: plastics, over 3,000%; soils and rubble, over 2,000%; steel and aluminium cans, over 700%; and wood, 700%.

The increase in recycling has been largely driven by the need to meet the (then) Scottish Executive's targets for recycling and composting. Future targets have been set by the Scottish Government as part of its plans for a zero waste Scotland.

The main collection methods are kerbside collections, recycling centres, recycling points (such as sites at supermarkets), and materials recovered at sorting facilities.

## Municipal waste recycled in Scotland – breakdown by material 2002/03 – 2006/07



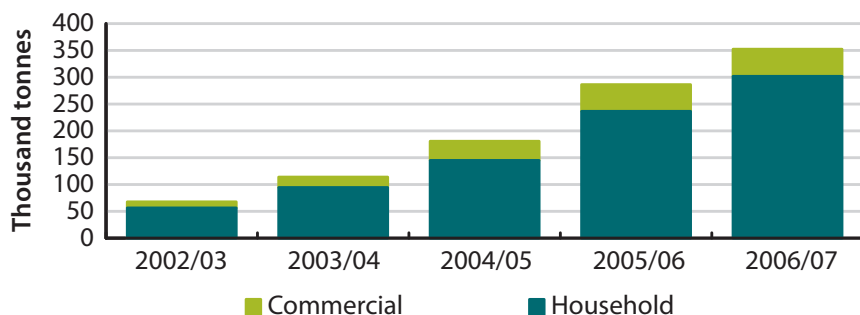
Material	2002/03	2003/04	2004/05	2005/06	2006/07
Paper and card	67,660	91,406	130,309	191,816	231,354
Glass	36,950	46,669	59,457	74,563	91,441
Soil/rubble	4,280	32,070	87,973	98,773	91,365
Wood	5,847	13,755	34,376	35,138	46,693
Scrap metals	23,267	29,007	33,629	38,408	41,334
Textiles	3,583	5,558	8,484	14,377	14,971
Residue from incineration	14,343	10,709	10,286	15,975	12,913
Plastics	367	627	3,939	7,963	12,083
Fridges/freezers	n/a*	1,566	11,087	9,716	10,017
Cans	1,096	1,603	3,336	6,263	9,129
White goods/WEEE†	9,102	10,873	3,866	4,343	6,724
Batteries	726	1,140	1,076	1,339	1,465
Other‡	22,448	41,086	27,254	55,346	53,475
<b>Total</b>	<b>189,669</b>	<b>286,069</b>	<b>415,072</b>	<b>554,020</b>	<b>622,966</b>

\*2002/03 figures have been included in white goods total, as these figures were not reported separately.

†Waste Electrical and Electronic Equipment.

‡'Other' includes books, furniture, mineral oils, vegetable oils, paint, fluorescent tubes and aluminium foil.

## Municipal waste composted in Scotland 2002/03 – 2006/07



	Tonnes				
Waste type	2002/03	2003/04	2004/05	2005/06	2006/07
Household	56,395	94,455	144,956	236,529	301,778
Commercial	11,361	19,488	35,759	49,764	50,589
<b>Total</b>	<b>67,756</b>	<b>113,943</b>	<b>180,715</b>	<b>286,293</b>	<b>352,367</b>

In 2002/03 approximately 68,000 tonnes of waste were composted by Scottish local authorities and this rose to over 352,000 tonnes in 2006/07, an increase of 420%. Approximately 60% of households were offered a kerbside collection of green waste by their local authority in 2006/07.

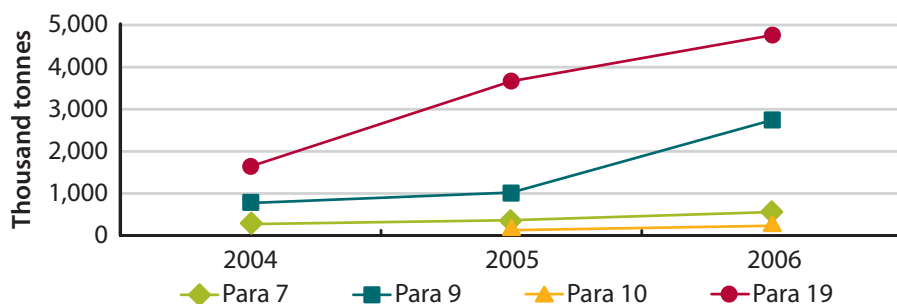
Much of the increase was due to green waste, which had previously been included by households in the general kerbside refuse collection, now being sent for composting. Additionally, it is likely that some materials, previously composted or burnt at home, were included by households in local authority collections.

Composting can involve a weight loss. The quantities in this section refer to the weight of the waste sent for composting rather than the weight of material resulting from the composting process. Some material resulting from composting is used as daily cover at landfills. This is considered to be disposal and therefore the weight of this material has been subtracted from the figures in the table.

Local authorities use composting to reduce the amount of biodegradable waste going to landfill. The main collection methods were from kerbsides and at recycling centres. A variety of methods are used to compost biodegradable materials including windrow, in-vessel composting, mechanical biological treatment and anaerobic digestion.



## Waste managed by relevant exempt activities in Scotland 2004 – 2006



Exemption paragraph	2004	2005	2006
Paragraph 7	272,744	364,968	558,927
Paragraph 8	-	135,618	39,929
Paragraph 9	773,676	1,022,296	2,743,967
Paragraph 10	-	127,808	233,506
Paragraph 12	-	61,489	43,608
Paragraph 19	1,643,500	3,666,558	4,758,739
<b>Total</b>	<b>2,689,920</b>	<b>5,378,737</b>	<b>8,378,676</b>

The amount of waste managed by relevant exempt activities in Scotland increased by 211% from 2.7 million tonnes in 2004 to 8.4 million tonnes in 2006.

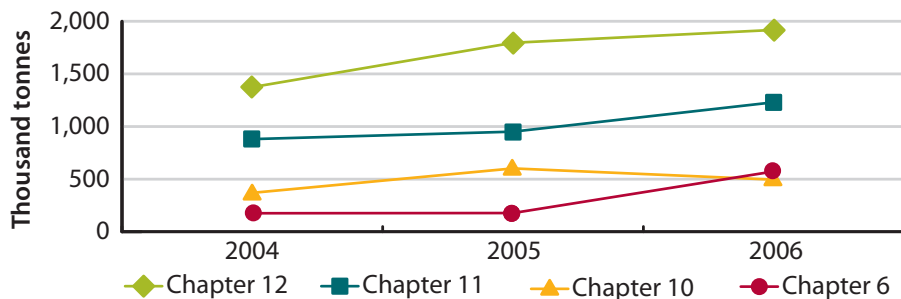
A number of factors could have contributed to this rise, such as an increase in the quantity of construction and demolition waste arising, more exempt sites registering, more waste being managed by exempt activities rather than at licensed/permited sites and more robust data analysis.

Relevant exempt activities are those that are required to keep records of the types and quantities of waste managed and to provide these records to SEPA on request. In 2004 this requirement related to paragraphs 7, 9 and 19 only but was extended to include paragraphs 8, 10, 12 and 46 in 2005. In this period there were no paragraph 46 exemptions in Scotland. There are no statutory reporting requirements for the remaining exempt activities.

Exempt activities are lower risk waste management activities, such as certain reclamation and recycling activities that are not usually seen as a threat to the environment or human health. They are exempt from the need to obtain a waste management licence or Pollution Prevention and Control permit but they are required to register with SEPA.

Supporting information on exempt activities can be found on page 32.

## Controlled waste treated at licensed/permitted waste management sites in Scotland 2004 – 2006



The different materials treated at Scottish waste management facilities vary considerably in quantity. The graph on this page shows the four largest waste streams treated and the one on the following page shows the remaining waste streams.

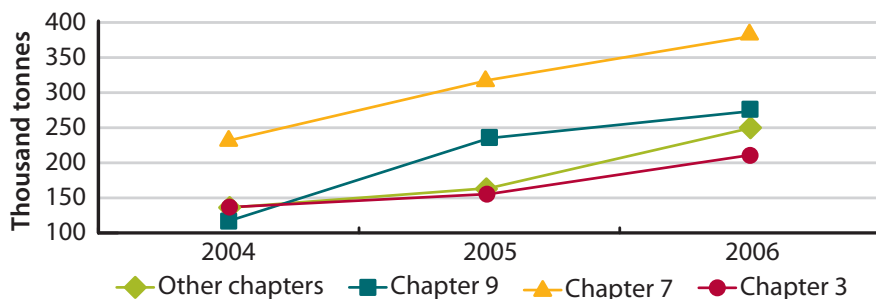
The quantity of waste treated at waste management facilities in Scotland increased by 56% between 2004 and 2006 to 5.33 million tonnes. The main waste streams treated were mineral wastes, including construction and demolition waste (1.92 million tonnes); common sludges, including sludges from sewage treatment and from the purification of drinking water (1.23 million tonnes); and metallic wastes including ferrous and non-ferrous scrap (0.57 million tonnes).

The increase in waste treated can be partly explained by the requirements of the Landfill (Scotland) Regulations 2003, which enacted the requirements of the Landfill Directive (1999/31/EC) into Scottish law. Among the requirements of the regulations is that landfills can only take wastes that have been pre-treated. Treatment can reduce the volume and biodegradability of waste sent to landfill, helping to meet Landfill Directive targets for municipal solid waste and reducing disposal costs for industry.

Waste can be treated by physical, chemical or biological processes in order to produce a material that is suitable for reuse, recycling, further processing or safe disposal.

Supporting information on EWC-STAT codes can be found on page 31.

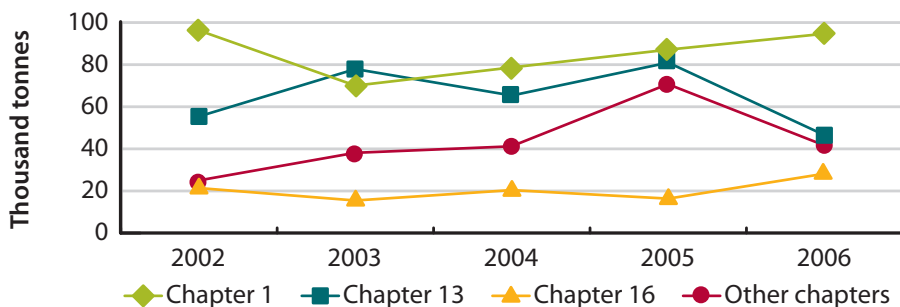
## Controlled waste treated at licensed/permited waste management sites in Scotland 2004 – 2006



Waste type by EWC-STAT* code	Tonnes		
	2004	2005	2006
3 Other chemical wastes	136,718	155,634	211,018
6 Metallic wastes	176,205	175,393	573,490
7 Non-metallic wastes	231,764	318,297	380,126
9 Animal and vegetal wastes	117,033	235,187	273,442
10 Mixed ordinary wastes	370,047	586,789	495,551
11 Common sludges	880,574	949,865	1,230,384
12 Mineral wastes	1,374,412	1,814,447	1,917,771
Other Chapter codes	136,081	140,806	249,388
<b>Total</b>	<b>3,422,834</b>	<b>4,376,418</b>	<b>5,331,170</b>

\*European Waste Catalogue for Statistics – see page 31 for further information.

## Special waste consigned to treatment plants in Scotland 2002 – 2006



	Tonnes				
Waste type by EWC* 2002 chapter code	2002	2003	2004	2005	2006
Chapter 01	96,262	70,050	78,685	87,122	94,687
Chapter 07	14,370	15,096	16,089	20,849	8,676
Chapter 13	55,405	77,908	65,348	80,971	46,495
Chapter 16	21,385	15,478	20,423	16,374	28,220
Chapter 19	147	755	6,437	22,382	6,941
Other chapter codes	10,476	22,265	18,677	27,516	26,057
<b>Total</b>	<b>198,045</b>	<b>201,552</b>	<b>205,659</b>	<b>255,214</b>	<b>211,076</b>

\*European Waste Catalogue

The quantity of special waste consigned (sent) to treatment plants in Scotland was relatively stable for the years 2002 to 2006, at approximately 205,000 tonnes. The exception was 2005, when 255,000 tonnes were sent. In 2006 the principal waste streams treated were mining and mineral wastes, including waste from the oil production industry (94,687 tonnes), and oil and oil/water mixtures (46,495 tonnes).

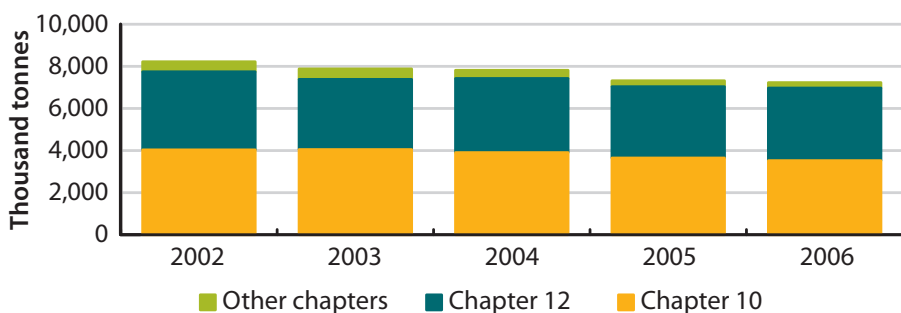
The waste managed by treatment plants in Scotland includes not only waste originating in Scotland but also waste sent from England, Northern Ireland and Wales.

Special waste can be treated by physical, chemical or biological processes in order to produce a material that is suitable for reuse, recycling, further processing or safe disposal. Treatment processes may reduce the hazardous nature, biodegradability or volume of a waste, or simply involve the physical separation of materials.

Special wastes are wastes that pose particular risks to human health and the environment. They are classed as such because they have one or more hazardous characteristics or properties, such as being explosive, highly flammable, toxic or carcinogenic. In the rest of the UK they are referred to as hazardous waste.

Supporting information on the European Waste Catalogue (EWC) 2002 chapter codes can be found on pages 30 and 31.

## Controlled waste disposed of to landfill in Scotland 2002 – 2006



Waste type by EWC-STAT* code	Thousand tonnes				
	2002	2003	2004	2005	2006
3 Other chemical wastes	136.01	74.32	39.62	24.82	24.13
7 Non-metallic wastes	120.30	103.70	54.14	31.76	34.64
9 Animal & vegetal wastes	92.81	101.43	105.93	63.71	31.46
10 Mixed ordinary wastes	4,034.57	4,049.10	3,905.03	3,648.24	3,523.33
11 Common sludges	22.28	36.50	25.12	91.09	59.26
12 Mineral wastes	3,709.32	3,333.90	3,520.37	3,387.42	3,448.18
Other EWC-STAT codes	104.52	181.08	164.66	69.68	108.05
<b>Total</b>	<b>8,219.81</b>	<b>7,880.03</b>	<b>7,814.87</b>	<b>7,316.72</b>	<b>7,229.05</b>

\*European Waste Catalogue for Statistics

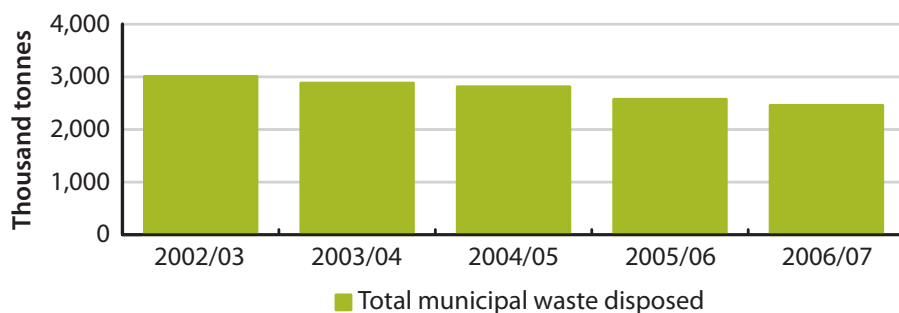
The quantity of controlled waste landfilled in Scotland steadily decreased between 2002 and 2006 but now appears to be levelling out at about 7 million tonnes. Much of the decrease can be explained by reductions in construction and demolition (C&D), municipal waste and special wastes.

In 2006/07, the main waste streams landfilled were mixed ordinary wastes including municipal, and mineral wastes including C&D waste. Together, these comprise over 96% of the total. About 30% of waste landfilled originates from households and the remainder is produced by commerce and industry.

The (then) Scottish Executive set targets for reducing the quantity of biodegradable municipal waste sent to landfill by local authorities until 2009/10. These helped drive down the municipal waste landfilled. In January 2008, the Scottish Government set additional targets for the landfilling of municipal waste, which should help continue this reduction. No equivalent targets have been set for commercial and industrial wastes.

Supporting information on EWC-STAT codes can be found on page 31.

## Municipal waste disposed of in Scotland 2002/03 – 2006/07



Disposal type	Tonnes				
	2002/03	2003/04	2004/05	2005/06	2006/07
Landfill	2,929,347	2,808,589	2,737,968	2,493,538	2,398,433
Incineration*	74,333	73,137	74,192	80,418	60,931
Other	5,727	0	458	492	27
<b>Total</b>	<b>3,009,407</b>	<b>2,881,726</b>	<b>2,812,618</b>	<b>2,574,448</b>	<b>2,459,391</b>

\* Incineration with energy recovery

In 2006/07, approximately 2.46 million tonnes (72%) of the municipal waste were disposed of by Scottish local authorities. Landfilling was the principal method of disposal, accounting for about 98% of the waste with the remainder incinerated with energy recovery. Between 2002/03 and 2006/07 the quantity of municipal waste disposed of decreased by 550,000 tonnes (18%). The decrease was mainly in the waste landfilled.

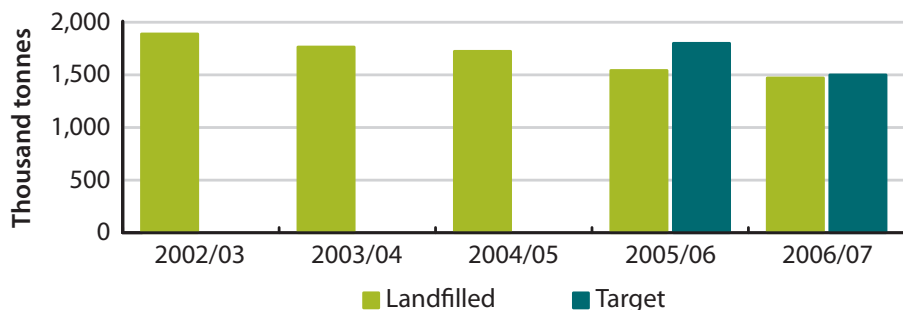
There was little change in the quantity of waste incinerated, with much of the variability due to incinerator 'down-time'. There were two incinerators with energy recovery in Scotland licensed to manage municipal waste during this period: one in Dundee and the other in the Shetland Islands.

The decrease in the waste disposed of resulted mainly from the need to meet the targets set by the (then) Scottish Executive to reduce the amount of biodegradable municipal waste landfilled and to increase the amount of municipal waste recycled and composted.

In January 2008 the Scottish Government set targets for municipal waste landfilling and energy from waste as part of its plans for a zero waste Scotland. They are:

Year	Landfilling (%)	Energy from waste (%)
2010	56	4
2013	36	14
2020	15	25
2025	5	25

## Biodegradable municipal waste landfilled by Scottish local authorities 2002/03 – 2006/07



	Tonnes				
	2002/03	2003/04	2004/05	2005/06	2006/07
BMW* target	-	-	-	1,800,000	1,500,000
BMW landfilled	1,889,248	1,765,108	1,724,273	1,541,555	1,471,026

\*Biodegradable municipal waste

The total amount of biodegradable municipal waste (BMW) landfilled by Scottish local authorities steadily decreased from 1.89 million tonnes in 2002/03 to 1.47 million tonnes in 2006/07. Scotland successfully landfilled less BMW than the targets for both 2005/06 and 2006/07. Future BMW targets for Scotland, set by the (then) Scottish Executive, are a maximum of 1.44 million tonnes in 2007/08; a maximum of 1.38 million tonnes in 2008/09 and a maximum of 1.32 million tonnes in 2009/10.

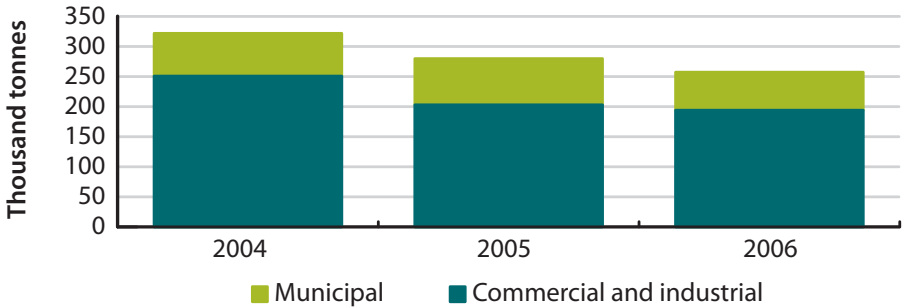
Twenty-seven local authorities met their annual permitted landfill allowances in 2006/07. The permitted landfill allowances included the amount allocated to them by the (then) Scottish Executive, plus any unused allowances banked from the previous year. To help reach these targets, local authorities recycled more biodegradable waste (such as paper, textiles and cardboard) and introduced, or increased, green waste and kitchen waste collections for composting or treatment.

BMW is the fraction of municipal waste that will degrade within a landfill, giving rise to methane emissions. It includes food waste, green waste, paper and cardboard.

The Landfill Directive aims to reduce the negative effects of landfilling waste. The UK government identified the maximum amount of BMW that the UK can landfill for certain target years up to 2020, and a proportion of these were allocated to Scotland. The (then) Scottish Executive assigned annual BMW landfill allowances to each Scottish local authority until the 2009/10 financial year.



## Waste managed by incinerators and other thermal treatment plants in Scotland 2004 – 2006



	Tonnes		
	2004	2005	2006
Municipal	71,144	76,912	63,295
Commercial and industrial*	250,788	203,019	194,080
<b>Total</b>	<b>321,932</b>	<b>279,931</b>	<b>257,375</b>

\*The commercial and industrial waste incinerated does not include any collected as part of municipal waste collection.

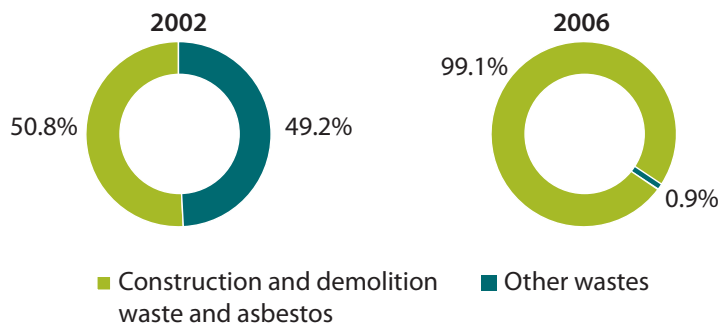
The overall amount of waste managed by incinerators and other thermal treatment plants in Scotland decreased by 20% from 2004 to 2006.

The quantity of commercial and industrial waste managed by incinerators and other thermal treatment plants decreased by 23% between 2004 and 2006. This is in line with a decrease in the number of incineration plants handling commercial and industrial wastes, from 20 in 2004 to 13 in 2006.

The amount of municipal waste managed by incinerators increased by 8% between 2004 and 2005. This was followed by an 18% decrease between 2005 and 2006 as a result of incinerator 'down-time'.

Thermal treatment is the broad term for the use of heat to treat waste. It includes incineration, other high temperature processes such as pyrolysis and gasification, and low temperature processes such as technologies for producing refuse derived fuel. In 2006 there were two municipal waste incinerators with energy recovery and 11 other operational incinerators and thermal treatment plants that dealt with commercial and industrial waste in Scotland.

## Special waste landfilled in Scotland 2002 – 2006



Waste type by EWC* 2002 chapter code	Tonnes				
	2002	2003	2004	2005	2006
Chapter 1	3,344	2,063	5,753	28	9
Chapter 5	4,661	808	376	170	0
Chapter 6	11,805	750	2	0	12
Chapter 13	20,881	6,818	3,773	151	140
Chapter 16	3,148	377	166	28	42
Chapter 17	53,536	142,845	156,891	43,724	77,454
Chapter 19	1,506	7,234	3,921	51	417
Other EWC Codes	6,600	3,503	1,950	273	111
<b>Total</b>	<b>105,481</b>	<b>164,398</b>	<b>172,832</b>	<b>44,425</b>	<b>78,185</b>

\*European Waste Catalogue

In 2006 approximately 78,000 tonnes of special waste were landfilled in Scotland and, of this, 99% was construction and demolition (C&D) waste (EWC chapter 17). This compares with 105,000 tonnes in 2002, of which 51% were C&D wastes.

The changes in the types and quantities of special wastes landfilled can be explained largely by the need to meet the requirements of the Landfill (Scotland) Regulations 2003, which came into force in April 2003. Specific wastes such as liquid, explosive, corrosive, oxidising, highly flammable or flammable waste, infectious waste and other clinical waste from medical or veterinary establishments, were banned from landfills.

Much of the variability in quantities of C&D landfilled can be explained by the variations in the quantity of contaminated soils arising from large construction projects.

The waste landfilled in Scotland includes not only waste originating in Scotland but also waste sent from England, Northern Ireland and Wales.

Supporting information on EWC 2002 chapter codes can be found on page 30 and 31.

## Supporting information

### Audit Scotland classification of local authorities

Audit Scotland classifies Scottish local authorities as rural, mixed or urban.

<b>Rural</b>	<b>Mixed</b>	<b>Urban</b>
Aberdeenshire	Angus	Aberdeen City
Argyll & Bute	Clackmannanshire	Dundee City
Dumfries & Galloway	East Ayrshire	East Dunbartonshire
Eilean Siar	East Lothian	City of Edinburgh
Highland	East Renfrewshire	Falkirk
Orkney Islands	Fife	Glasgow City
Perth & Kinross	Inverclyde	North Lanarkshire
Scottish Borders	Midlothian	Renfrewshire
Shetland Islands	Moray	West Dunbartonshire
	North Ayrshire	
	South Ayrshire	
	South Lanarkshire	
	Stirling	
	West Lothian	

### European Waste Catalogue List of Waste (EWC 2002)

EWC 2002 is a harmonised, non-exhaustive list of waste types established by the European Commission. It categorises wastes based on a combination of what they are, and the process or activity that produces them.

The use of EWC 2002 codes to describe waste on waste transfer notes in Scotland has been statutory since April 2004. The majority of statutory waste data returns received by SEPA, including licensed/permitted site returns, exempt activity returns and special waste consignment notes require waste to be classified according to the EWC 2002.

It is divided into 20 chapters, most of which are industry-based, although some are based on materials and processes. Each chapter is represented by a two-digit code between 01 and 20 and comprises one or more subchapters; each subchapter is subdivided into individual waste types.

### Chapter codes and abbreviated descriptions

01 Mining and minerals	11 Metal treatment and coating processes
02 Agricultural and food production	12 Shaping/treatment of metals and plastics
03 Wood and paper production	13 Oil and oil/water mixtures industry
04 Leather and textile production	14 Solvents
05 Petrol, gas and coal refining/ treatment	15 Waste packaging, wiping cloths
06 Inorganic chemical processes	16 Wastes not otherwise specified
07 Organic chemical processes	17 Construction and demolition waste
08 Paints, varnish, adhesive and inks	18 Human or animal health care
09 Photographic industry	19 Waste/water treatment and water
10 Thermal process waste (inorganic) and asbestos	20 Municipal and similar commercial

### European Waste Catalogue for Statistics (EWC-STAT)

The EWC-STAT is a (mainly) substance-oriented statistical classification of waste. There are 13 categories represented by a two-digit code between 01 and 13. These are subdivided into individual waste types.

A table of equivalence allows wastes coded in the EWC 2002 coding system to be converted into the EWC-STAT coding. However, because of the way the coding system operates, it is not possible to do the reverse conversion.

#### Category and waste type

01 Chemical compound wastes	08 Discarded equipment
02 Chemical preparation wastes	09 Animal and vegetal wastes
03 Other chemical wastes	10 Mixed ordinary wastes
04 No longer used	11 Common sludges
05 Health care and biological wastes	12 Mineral wastes
06 Metallic wastes	13 Solidified, stabilised or vitrified waste
07 Non metallic wastes	

## Exempt activities

There are 48 activities that are exempt from waste management licensing, although they are still subject to statutory controls to prevent environmental pollution and harm to human health. The following paragraphs are required to provide information to SEPA on the types and quantities of waste managed by them if requested.

Paragraph 7 - Treatment of land for agricultural benefit or ecological improvement

Paragraph 8 - Storage and spreading of sludge

Paragraph 9 - Reclamation or improvement of land

Paragraph 10 - Reception and treatment of specified waste at a water treatment works

Paragraph 12 - Composting

Paragraph 19 - Waste for construction and other 'relevant work'

Paragraph 46 - Burning of plant tissue or wood at a dock

## Zero waste

Zero waste is a concept which is increasingly being adopted internationally. It is about reducing the unnecessary use of raw materials, sustainable design of products, preventing waste, and recovering value from products and materials when they reach the end of their lives through recycling, composting or energy recovery.

To assist with its plans for a zero waste Scotland, the Scottish Government has set targets for certain years for the percentage of municipal waste recycled and composted, the percentage landfilled, and the percentage incinerated with energy recovery. The target years are 2010, 2013, 2020 and 2025 and in the final year the targets set are a minimum of 70% recycled, a maximum of 5% landfilled, and a maximum of 25% incinerated.

# Glossary

<b>Biodegradable waste</b>	Waste that is capable of undergoing anaerobic (oxygen poor) or aerobic (oxygen rich) decomposition, such as food or garden waste and paper and cardboard.
<b>Commercial waste</b>	Waste arising from premises that are used wholly or mainly for trade, business, sport, recreation or entertainment, excluding household and industrial waste (as defined in Environmental Protection Act 1990, section 75).
<b>Composting</b>	The controlled biological decomposition and stabilisation of biodegradable materials (such as organic garden and kitchen wastes) under predominantly aerobic conditions to produce a humus-rich, sanitised and stabilised product that can be beneficial to soil.
<b>Construction and demolition waste (C&amp;D)</b>	Arising from the construction, repair, maintenance and demolition of buildings and structures.
<b>Controlled waste</b>	Household, industrial and commercial waste or any such waste that requires a waste management licence for treatment, transfer or disposal (as defined by Environmental Protection Act 1990, section 75).
<b>Disposal</b>	Any of the operations provided for in Annex II A of the Waste Framework Directive. This includes incineration and landfilling.
<b>Energy from waste (EfW)</b>	The recovery of energy value from waste by burning the waste directly, or by burning a fuel produced from the waste.
<b>Exempt waste</b>	Waste managed by activities that are exempt from waste management licensing.
<b>Green waste</b>	Includes vegetation and plant matter from household gardens, local authority parks and gardens.
<b>Household waste</b>	Waste from domestic properties, including waste from caravans, residential homes and premises forming part of an educational establishment or part of a hospital or nursing home.
<b>Incineration</b>	The controlled burning of waste, either to reduce its volume or its toxicity.
<b>Incineration with energy recovery</b>	Incineration with the recovery of energy in the form of power and/or heat.
<b>Industrial waste</b>	Waste from a factory (within the meaning of the Factories Act 1961) or from any premises used for, or in connection, with: <ul style="list-style-type: none"> <li>• provision of public transport;</li> <li>• public supply of gas, water, electricity or sewerage services;</li> <li>• provision to the public of postal or communication services.</li> </ul>

<b>In-vessel composting</b>	The method of composting that involves the decomposition of organic waste within an enclosed container, where moisture, temperature and odour can be regulated.
<b>Kerbside collection</b>	Any regular collection of recyclable or compostable materials from premises. Excludes collection services delivered on demand.
<b>Landfill</b>	Area of land in or on which waste is deposited.
<b>Materials reclamation facility</b>	A facility to process wastes for the purpose of recovering useful materials using a variety of processes to separate out different materials.
<b>Mechanical and biological treatment</b>	A system that combines the mechanical sorting of materials for recycling and the bio treatment of the remaining waste that will have a high organic content.
<b>Municipal waste</b>	See Important information section on page 6.
<b>National Waste Plan</b>	The framework for delivering the National Waste Strategy, published by SEPA in 2003.
<b>Recovery</b>	Generating value from wastes from a wide variety of activities such as recycling, composting and energy recovery.
<b>Recycling</b>	Using waste materials in the manufacturing other products of an identical or similar nature, as defined by the Organisation for Economic Co-operation and Development in Strategic Waste Prevention, published in 2000.
<b>Recycling centre/ Civic amenity site</b>	A manned site for depositing recyclates. Recycling centres usually accept a wider range of waste materials than Recycling points and can include other facilities, such as normal household waste disposal.
<b>Recycling point/ bring sites</b>	An unmanned site with a container, or a collection of containers, for depositing recyclates, eg at a supermarket.
<b>Special waste</b>	Wastes that pose particular risks to human health and the environment.
<b>Thermal treatment</b>	A generic term covering processes that involve the use of heat to treat waste.
<b>Transfer station</b>	A site to which waste is delivered for sorting and compacting, prior to transfer to another place for recycling, treatment or disposal.
<b>Waste</b>	Any substance or object in the categories set out in Annex 1 of the Waste Framework Directive (91/156/EEC), which the holder discards or intends or is required to discard.
<b>Waste arisings</b>	The amount of waste generated in a given locality over a given period of time.
<b>Windrow composting</b>	The method of composting that involves piling organic waste outside in long rows (windrows).



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