

# Market survey of the UK organics recycling industry - 2007/08



Detailed survey investigation of the UK composting and biological treatment industry in 2007/08 showing growing quantities of organic waste being composted and otherwise biologically treated, and market development for the resultant organic products.

This survey was carried out by M.E.L Research on behalf of the Association for Organics Recycling and WRAP



The Association for Organics Recycling, WRAP and M-E-L Research believe the content of this report to be correct as at the date of writing.

However, some factors are subject to change therefore care should be taken in using any of the information provided as it is based upon project specific assumptions (such as scale, location, context, etc).

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# Executive summary

## Key findings

- In total, 4.5 million tonnes of source segregated waste was composted in the UK in 2007/08, an increase of 9% on the updated statistics for the previous year.
- Of this total, 88% was municipal waste, with just under a half of this collected at civic amenity sites and just under a further half collected from kerbside collections.
- Less than one per cent of the municipal waste recycled was food waste collected separately at the kerbside, however, over 400,000 was co-collected with green waste.
- Only 538,000 tonnes (12% of the total) of the waste recycled was from non-municipal sources, of which just under a third (29%) was from landscaping / grounds maintenance, and over a third (37%) from food waste industry wastes.
- The quantity of mixed waste undergoing biological treatment was much lower than for source segregated composting at only 583,500 tonnes of mixed waste.
- Annual turnover of the composting and biological treatment industry was estimated at £166 million. This estimate is 49% above the 2006/07 figure, although the main source of the increase is likely to be due to a more accurate survey technique used this year.
- Employment was estimated at 1,350 full time equivalents, almost the same as in 2006/07 and up 13% on 2005/06.
- The sector was dominated by a large number of medium sized sites, with 58% of sites processing between 10,000 and 50,000 tonnes of input feedstocks.
- Overall, 91% of the total quantity of source segregated waste input was composted at 62% of sites. These were the sites with throughputs in excess of 10,000 tonnes a year.
- Sites processing between 10,000 to 50,000 tonnes accounted for 74% of the total quantity of source segregated organic waste recycled, with only 3% of waste processed at sites taking less than 5,000 tonnes a year.
- Nearly half (46%) of the companies surveyed were specialist compost / biological treatment operators, similar to 2006/07. These companies processed 51% of the total source segregated waste composted. Approximately 35% of source segregated waste was processed by solid waste treatment or disposal companies.
- Most source segregated input waste (67%) was composted at dedicated composting / biological treatment sites, with a further 12% composted at landfill sites and 10% at farm sites.
- The majority of sites (86%) solely composted waste that was imported from outside the composting site
- The majority of source segregated waste (78%) was composted using open air mechanically turned windrows, similar to that found for 2006/07. A further 16% (or 732,000 tonnes) was composted in-vessel: an increase of 291,000 tonnes between 2006/07 and 2007/08.
- It was estimated that there was up to 1.1 million tonnes of unused source segregated waste processing capacity and approximately 137,000 tonnes of unused mixed waste processing capacity available in the UK. Total processing capacity in the UK during 2007/08 was estimated at around 5.7 million tonnes.
- The total quantity of composted products increased by 9% on the previous year: rising from 2.46 million tonnes in 2006/07 (revised figure) to 2.69 million tonnes in 2007/08.
- The main compost product was soil conditioner which accounted for 1.9 million tonnes or 71% of the total products produced.
- Soil conditioners also accounted for the largest quantity of material containing food waste feedstocks (313,000 tonnes), with the growing media sector utilising over 30,000 tonnes of compost containing some food waste feedstocks. It is estimated that in total approximately 237,000 tonnes of product derived from food waste feedstocks was sold in the UK in 2007/08.
- Agriculture remained the largest market sector with almost 1.3 million tonnes supplied (47% of the total), with the majority used on arable / cereal crops. Agriculture was the largest growth sector for the industry, having more than doubled over the past five years.
- Approximately 14% (or 389,000 tonnes) of product was supplied to landfill restoration / daily cover 14% and a further 13% (354,000 tonnes) went to landscaping.
- The quantity of mixed organic waste treated in the UK in 2007/08 is estimated at 584,000 tonnes. The vast majority of this was used on the site of production or other sites of the producer, disposed directly to landfill or distributed with no charge.

## General summary of the survey

This annual market survey of the UK composting and biological treatment industry for 2007/08 was carried out on behalf of the Association for Organics Recycling (AFOR) and the Waste & Resources Action Programme (WRAP) by M·E·L Research. It followed on from previous surveys implemented by or on behalf of the Association for Organics Recycling.

Information was gathered on composting and mechanical biological treatment (MBT) of municipal and non municipal waste in the UK, as well as anaerobic digestion (AD). The majority of biological treatment sites covered by this survey composted organic wastes (i.e. subjected them to a biologically-mediated aerobic treatment process). This was reflected in the reporting terminology, which principally refers to composting and the production of composted products.

The survey had another excellent response rate this year from composting companies, with survey information obtained from 107 companies who, between them, ran 204 composting or biological treatment sites in 2007/08. Comparison with UK municipal waste data showed that the survey had captured detailed information on almost 60% of all UK municipal waste composting by quantity.

The high survey response rate has allowed for robust estimates for the financial turnover of the UK organics recycling industry in 2007/08 to be made, covering the production (not including blending), distribution and sales of compost. The 2007/08 the industry turnover was estimated to be about £166 million, an increase of 49% on the figure for 2006/07. This apparent increase is likely to be due to more accurate method of calculation introduced this year, rather than a real economic growth of this magnitude.

It has also been possible to make reliable estimates of employment in the UK composting industry. The employment in the composting industry in 2007/08 was estimated at 1,350 full time equivalent employees, about the same as in 2006/07 and an increase of 13% on 2005/06.

The quantity of source segregated organic waste composted in 2007/08 was 4.5 million tonnes according to extrapolations based on the independently verified WasteDataFlow statistics. This was an increase of 9% on the revised estimate of 4.1 million tonnes of organic waste composted in 2006/07. In total, 88% of this was municipal waste with just under half of the municipal waste coming from materials deposited at civic amenity sites, and just under a further half from household kerbside collections.

Composted products increased by 9% on the previous year rising from 2.46 million tonnes in 2006/07 (revised estimate) to 2.69 million tonnes in 2007/08. Approximately half (49% or 1.3 million tonnes) of the compost produced from source segregated feedstock in 2007/08 was sold (up 5% from 2006/07), with the majority of this fraction being sold directly to end users. Almost one third of the compost produced was used on the site of production and almost one fifth of the compost produced was distributed with no charge. In 2007/08, 36% of the total quantity of compost produced in the UK from source segregated feedstock was fully certified to BSI PAS 100, equivalent to 977,000 tonnes.

Agriculture was the market sector using by far the greatest quantity of composted products manufactured from source segregated waste, with 1.3 million tonnes of composted products being supplied in 2007/08 (47% of the total). Most of the compost going to agriculture went to arable / cereal crops. The next largest quantities of compost went to landfill restoration / daily cover which took 389,000 tonnes of compost in 2007/08, followed by landscaping which took 354,000 tonnes. Nearly half of compost produced from source segregated feedstocks was sold (49%) and almost one third (30%) was used on the site of production.

Composting companies using source segregated feedstock saw agriculture, horticulture and landscaping as the market sectors offering the greatest potential for growth for their composting businesses in the year ahead.

There was also a small amount of mixed biological waste treated by the industry. Approximately 583,500 tonnes of mixed waste was processed and around 344,500 tonnes of this was biodegradable waste. an estimated 584,000 tonnes. The majority of outputs were either used on the site of production or other sites of the producer, disposed of directly to landfill or distributed with no charge.

It was estimated that there was up to 1.1 million tonnes of unused source segregated waste processing capacity and approximately 137,000 tonnes of unused mixed waste processing capacity available in the UK. Capacity in the UK during 2007/08 was estimated at around 5.7 million tonnes. Many compost companies had definite plans to expand their composting capacities at existing and / or new sites. The vast majority of this expansion was for source segregated waste rather than mixed waste composting with an estimated 600,000 tonnes new capacity for source segregated waste inputs due to come on line over the next five years, taking total UK capacity to over 6.3 million tonnes.

## 1.0 Introduction

This 2007/08 survey was undertaken in the later part of 2008 and early 2009 by M·E·L Research on behalf of the Association for Organics Recycling (AFOR), and the Waste & Resources Action Programme (WRAP). It covers organic waste recycling across the UK, with particular emphasis on biological treatment techniques, such as composting and anaerobic digestion (AD), as well as residual waste processing through mechanical biological treatment (MBT). It followed on from surveys carried out in preceding years by, or on behalf of, AFOR, where the principal focus was the composting sector. Over recent years the industry has expanded substantially and its technological process mix has become more diverse. This year we have reflected the changes by re-naming the survey as the Market Survey of the UK Organics Recycling Industry, This more clearly and accurately positions the industry as one engaged in a wide range of processes aimed primarily at recycling organic waste materials.

It should be noted that throughout the report, we have continued the convention in previous reports of referring to 'composting' companies notwithstanding that some are engaged in a wider range of processes. While the shorthand term is useful for brevity, we have sought to be specific in referring to other biological treatment processes where these pertain to specific sites.

Many of the topics covered by this 2007/08 survey were similar to those covered in previous years by AFOR surveys of the compost producing sector. Such areas included quantities and types of waste materials which are being composted, the amounts of compost that are produced, and the markets that the composted products are going into. Direct comparison of this 2007/08 survey with previous years could thus be carried out and trends over recent years investigated. It should be noted for this purpose, that an enhanced methodology has been introduced this year to provide a more accurate and reliable way of grossing up the survey results to national tonnages. To facilitate analysis of trends from the previous year, the upgraded methodology has been re-applied to the previous 2006/07 data and these revised statistics therefore form the basis against which 2007-08 trends are measured. Other topics covered in the 2007/08 survey, for example questions regarding whether sites were licensed or operating under exemption and regarding certification under the Quality Protocol, were new to the 2007/08 survey.

# Acknowledgements

The project team would like to thank all survey respondents for their time and efforts.

The project team is also grateful to Ingrid Toleman, our contract manager at WRAP for her continuing support and assistance; Jeremy Jacobs at AfOR for help in estimating the financial turnover of the UK composting industry; and Emily Nichols for help in the reporting of the survey capture rate for sites certified under PAS 100 and the Quality Protocol.

## 2.0 Operational survey methodology

### 2.1 Design of survey forms

The survey questionnaire was developed by WRAP, AFOR and M·E·L Research. It was based on that used in the 2006/07 survey which focussed primarily on compost producers. The period covered was the financial year 2007/08 or the time period best approximating to this, for which data were available. Two questionnaire formats were produced with the same content. One was suitable for printing and completing by hand, and the other format was a version suitable for completing electronically. Those compost producers who operated more than one composting / biological treatment site were asked to complete separate survey forms for each site. Copies of the survey questionnaire and covering letters are shown in Appendix 1.

### 2.2 Organisations surveyed

UK members of the Association for Organics Recycling were surveyed, which included the majority of composting companies in the UK (operating both large and small scale facilities), as well as the emerging anaerobic digestion (AD) and MBT sectors. There were just over 300 companies on AFOR's database. Details of some additional composting companies in England were also provided through an Environment Agency database of licensed and exempt composting sites in England and Wales. Details of additional composting companies in Scotland were also provided through a Scottish Environment Protection Agency database; and for Northern Ireland through an Environment & Heritage Service database. The aim was to gather information on composting operations from as many compost companies in the UK as possible.

This survey did not target the community sector specifically. However, there has been a separate Defra funded project (WR0211) undertaken in 2006 called "Unlocking the potential of community composting". The project was carried out by the Integrated Waste Systems group at the Open University in association with the Community Composting Network (CCN), London Community Recycling Network (LCRN) and the New Economics Foundation. It is expected that community composting in 2008 would have been broadly the same as in 2006 and in the absence of any new information the 2006 survey results have therefore been used as a proxy for 2008. To avoid duplication of effort, the community sector was therefore not specifically targeted in the current survey. Further information about the Defra funded project can be found in Appendix 2.

### 2.3 Administration of survey

Survey forms were sent out by email, where email addresses were available, or by post in October 2008 to those companies which had responded to last year's composting survey as well as those that hadn't. These

companies were also telephoned in December 2008 and February 2009 and given the further opportunity to complete the survey by telephone. This option had a good uptake.

AFOR had indicated which of their members were likely to have processed the largest amounts of organic waste in 2007/08. These 20 companies, "the larger throughput sites", were surveyed separately from the other companies on AFOR's list. Most were initially emailed or posted survey forms. These companies were then telephoned to identify the best contact or contacts for answering the survey and their preferred method for completing the questionnaire i.e., fill in forms by hand and post them back, complete the questionnaire electronically or, alternatively, to go through the survey information by phone.

### 2.4 Checking of returned survey forms

Survey forms returned by post and by email were checked to ensure that respondents had answered all the questions and that answers were consistent with each other. For example, it was checked that the quantity of compost product was lower than the quantity of waste input and that both totalled correctly. Where there were omissions or inconsistencies, respondents were telephoned or emailed for clarification.

Where respondents did not provide data on the quantities of compost produced, they were asked to provide a factor to convert the tonnes input to their composting processes to tonnes output. This factor was then used to calculate the output quantities. Where respondents could not do this, it was assumed that output was 67% of input. In the small number of cases where output quantities were provided in cubic metres instead of tonnes, density conversion factors provided by the Environment Agency were used to convert volume to tonnes. This generic coefficient was applied across the survey for simplicity, but in view of the emerging role of in-vessel composting (IVC) and anaerobic digestion (AD) it is intended that specific coefficients for these particular technologies should be introduced in future. For this and previous surveys however, the technological market share of these processes is not likely to have been large enough for the different coefficients to materially affect the overall results.

### 2.5 Telephone surveying of non respondents

In order to gather survey information from as many UK sites as possible, in December 2008, the process of ringing all non respondents was started. If it proved possible to get through to someone able to deal with the survey, non respondent companies were given the option of completing the survey either there and then by telephone, or an appointment was made in some

cases for M·E·L Research to ring back at a more convenient time. Where the telephone numbers provided were incorrect, directory enquiries were used. In some cases where it was not possible on several occasions to get through by telephone, email messages were sent to email contacts on the databases. In the case of organisations that were difficult to contact, repeated attempts were made to contact them before registering them as a survey non respondent.

## 2.6 Estimating financial turnover and employment within the sector

Respondents were asked to report their financial turnover from composting activities, and associated employment, in terms of specified size bands, the mid-point of which was then used to estimate the total turnover and employment within the sector. As with tonnage totals (see section 3) a gross-up method was used to account for firms not responding to this

section of the survey or not taking part at all (see detailed methods reported in section 4.1.2).

## 2.7 Reporting of biological treatment techniques

As the majority of biological treatment sites covered by this survey composted organic wastes (i.e. subjected them to a biologically-mediated aerobic treatment process), this is reflected in the reporting, which principally refers to composting and the production of composted products. Where organic wastes were treated anaerobically (i.e. at an anaerobic digestion plant) or mixed wastes were processed at an MBT facility, these have been reported separately.

In general, the reporting of this survey refers to organic waste recycling or composting specifically. For the purposes of this survey, the former refers to recycling through a biologically mediated treatment process, rather than a chemical or physical recycling process.

### 3.0 Statistical gross-up techniques allowing for non respondents

#### 3.1 Response rate

**The overall survey response rate was 41% of the 313 companies surveyed.**

Responses to the survey were received from 127 of the 313 companies targeted (Table 1). Of these, 107

respondents recycled organic wastes in 2007/08 and 20 did not – a response received from 41% of all companies approached. Overall, information was gathered on 204 sites at which biological treatment took place in 2007/08 (as some companies operated multiple sites). This compares to 222 site recordings in the previous year 2006/07, an overall decrease of 18.

**Table 1** Summary of survey response, 2007/08 and 2006/07

	<b>Number of organisations 2007/08</b>	<b>Number of organisations 2006/07</b>
Overall number of organisations surveyed	313	343
Respondents which composted	107	122
Respondents not composting	20	37
Non respondents	186	184
Response rate	41%	46%

#### 3.2 Estimating for biological treatment activity by non survey respondents

The non response for the survey was 186 organisations. On top of this nearly a sixth of the survey respondents did not compost or otherwise biologically treat waste in 2007/08 and it is therefore likely that a number of the non respondent companies also did not carry out any composting activities in 2007/08. This was particularly likely where company contact information was out of date and current details could not be found. The picture is further complicated by the existence of some companies that were not members of AFOR nor included on the Environment Agency database.

A good validation check on the proportion of composted waste that was captured by the survey can be made by comparing the survey results with official Defra WasteDataFlow<sup>1</sup> municipal waste data for the quantities of municipal waste collected and sent for composting. This official municipal waste data is known to be high quality, reliable data, as they have been externally validated. Table 2 shows the percentage of municipal waste composting that was captured by this survey. The percentages were calculated by comparing the survey data from this survey with the official data on the quantities of municipal waste sent for composting and other biological treatment in each of the four nations of the UK.

<sup>1</sup> See: [www.wastedataflow.org](http://www.wastedataflow.org)

**Table 2** Percentage of municipal waste recorded by survey respondents, 2007/08 and 2006/07

<b>Nation</b>	<b>Capture rate of municipal waste collected for composting in the UK (2007/08)</b>	<b>Capture rate of municipal waste collected for composting in the UK (2006/07)**</b>
England*	60%	64%
Wales*	47%	40%
Scotland*	56%	63%
Northern Ireland*	55%	66%
<b>UK total</b>	<b>59%</b>	<b>63%</b>

\* Data for England, Wales, Scotland and Northern Ireland were from WasteDataFlow 2006/07 and 2007/08 returns.

\*\* Data for 2006/07 have been revised using a refined gross-up methodology and therefore may differ to those reported in the 2006/07 report.

For the UK as a whole, Table 2 shows that 59% of source separated organic municipal waste recycled in 2007/08 was captured by this survey, in other words that 59% of source segregated municipal waste composting going on in the UK was carried out by 2007/08 survey respondents. This is a very good overall proportion to have been achieved by the survey. Looking at the situation in the individual UK nations, it can be seen from Table 2 that the capture rate of municipal waste composting by the survey was good for England (60%), Scotland (56%) and Northern Ireland (55%) but rather more moderate for Wales at 47%.

In order to allow for composting and mechanical biological treatment (MBT) not captured by this survey, the survey data on inputs of municipal wastes to composting sites for composting were scaled up so that this input data matched the validated data on municipal wastes input to composting, extracted from WasteDataFlow. The non municipal waste quantities composted by survey respondents were scaled up by the same factor. This assumed that the proportion of municipal and non municipal waste composted by survey respondents was representative of the UK composting industry as a whole. This is an established statistical method for projecting sample data onto a known national total, and is more reliable and robust than the alternative of grossing up the respondent sample by assuming non-respondents match respondents. The effect is to apportion the nationally known quantities (tonnes) to the known characteristics of the respondent sample. We have assumed the same factor applies in estimating national MBT totals and while there is no method for verifying this assumption,

this is the best method available for making national estimates of MBT quantities.

While the gross-up methodology for previous years was based on a simple matching of the national WasteDataFlow (WDF) statistics on source segregated municipal waste collected, to the source segregated waste inputs reported in this survey, closer examination of the WDF returns indicates that some of the lower grade separately collected organic municipal waste may in fact be added to mixed waste inputs to the growing amount of MBT and other mixed waste processes. For this reason we have introduced a refinement to the gross-up methodology, which also includes a more precise technique for apportioning 'unspecified' waste inputs (i.e. where the respondent firm has not separated municipal and non-municipal input quantities). This improved gross-up protocol should allow a more rigorous approach to producing national tonnage estimates to be used and sustained in future years as the complexity and diversity of waste feedstock inputs expands in future.

To allow this year's results to be compared on a like-for-like basis to those for last year, we have where necessary revised the 2006/07 results presented in this report, using the improved methodology introduced this year. This means that (apart from estimates of the financial size of the sector, which reflect a revised question format), the results year-on-year are harmonised so that valid matched comparisons can be made. Results for 2006/07 reported in this report therefore may differ from those reported in the 2006/07 report. This will be indicated throughout the current report where applicable.

## 4.0 Survey results

### 4.1 Nature of the UK organics recycling industry

#### 4.1.1 Types of organisation carrying out composting

Table 3 shows the main business activities of composting companies responding to the survey (composting here relates to companies receiving source segregated organic inputs and treating them through processes such as in-vessel composting as well as established windrow processes). In 2007/08 approximately 46% of composting companies stated that their main business activity was compost producer / biological treatment. This is a small increase of 1% over the previous year. Just 16% of composting operators considered their main business activity to be agricultural activities (a decrease of 6% on 2006/07 figures) and 19% were solid waste treatment / disposal companies (an increase of 4% on 2006/07 figures). The decrease in the number of agricultural operations may represent a slight down shift in on-farm composting, however, it was not possible to confirm this on the basis of the responses received and it may equally be the result of changes in the type of respondents between the two surveys.

It should be noted that the survey did not specifically gather information from the community / not for profit sector. This is because a separate Defra funded project has investigated composting in the community sector in the UK (see Appendix 2). As a result of this the proportion of community / not-for-profit businesses represented by this survey in Table 3 is unlikely to be representative.

For comparison, Table 3 also shows the percentages for 2006/07. The distribution of composting companies over different main business activities are similar to those in 2007/08 indicating that there has been no major change in the balance of types of composting companies over this time period. There has been a small increase of 3% specifying their main business activity as 'other' which indicates that there continues to be a small shift in industry structure towards specialised compost producers. The responses from the composting companies that fell into the 'other' category included: arboriculture; sand and gravel extraction; and a transfer station.

The decrease in the number of respondents between the 2006/07 and 2007/08 surveys may also be a result of consolidation within the sector, as it was known that a number of companies with complementary expertise had merged during the survey period.

**Table 3** Types of respondent organisations operating composting sites in the UK in 2007/08 and 2006/07

Main business activity	Number of companies in 2007/08	% of total companies in 2007/08	Number of companies in 2006/07	% of total companies in 2006/07
Compost producer / biological treatment	49	46%	55	45%
Agricultural activities	17	16%	27	22%
Solid waste treatment / disposal company	20	19%	18	15%
Local authority	11	10%	12	10%
Horticultural / landscaping activities	2	2%	4	3%
Wood recycling	1	1%	0	0%
Water treatment company	0	0%	1	1%
Community group / not-for-profit business*	3	3%	4	3%
Equipment / plant supplier / hire company	1	1%	1	1%
Anaerobic digestion	0	0%	0	0%
Other	3	3%	0	0%
Unspecified	0	0%	0	0%
<b>Total</b>	<b>107</b>	<b>100%</b>	<b>122</b>	<b>100%</b>

\* While this table reports only three responses from the community sector, we have included later in this report, the figures generated through a separate Defra funded survey of this sector (see Appendix 2 for more detail).

#### 4.1.2 *Financial size of the UK composting industry*

Composting companies were asked about the financial turnover of the composting and biological treatment aspects of their business including the production, distribution and sales of their compost. Table 4 shows the distribution by turnover bands of the 103 survey respondents who answered this question. Just under a third of responding companies (31%) had turnovers relating to composting of less than £100,000 with a further 31% of companies in the £100,000 to £500,000 band. There was a sizeable number (25) of survey respondents with turnovers over £1 million per annum, an increase on the 20 firms responding in this bracket in 2006/07, with nine of these reporting turnovers in excess of £3 million per annum. Only four survey respondents chose not to answer the question on turnover.

These data suggest that the organics recycling sector comprises a diverse range of company sizes, and hence business models, with the distribution of small, medium and large organisations remaining relatively constant between 2006/07 and 2007/08. This implies that economies of scale have not played a significant role to date.

The turnover information provided by respondents was used to calculate the financial size of the UK composting industry. In the previous year 2006/07, the maximum size band threshold in the questionnaire stopped at 'over £1 million' requiring a projected estimate to be made for these larger firms. Because of their proportionally large contribution to the estimates of the whole industry turnover, this year we included more size bands for these larger firms, to enable this size bracket to be examined more accurately. However, due to the commercially sensitive nature of this information these are reported in aggregate form in this report.

Table 4 shows that more than three-quarters of the whole industry's turnover arises from the quarter of all firms that lie in a turnover bracket over £1 million.

The more precise figures obtained for 2007/08 therefore now allow us to present a more accurate picture of the overall size of the sector. From this, it appears that the size of the sector was significantly under-estimated by the approximations used in 2006/07, and in turnover terms, the sector is now estimated to be about half as large again as the previous estimate, totalling over £166 million turnover during the year.

To calculate this, we repeated the grossing-up methods used in the previous year to cater (a) for respondent firms who omitted the turnover question (only 4 out of the 107) and (b) to take account of non-respondent firms. Thus, in addition to the reported turnover of the firms completing this question, an additional £2.3 million was estimated for survey respondents who did not provide turnover information, based on their tonnage throughout and the average 'turnover per tonne' coefficient derived from the respondent firms, i.e. by calculating turnover per tonne of source segregated waste input for all those answering the turnover question (irrespective of process type, for the reasons stated in para 4.1.3 below) and applying this to respondents not answering the turnover question. In order to allow for survey non respondents, the financial turnover of these operators was scaled up in proportion to their municipal waste inputs using the same standard method as described in Section 3.2.

The estimate for the turnover of survey non respondents was £68.1 million.

**The total estimated turnover for the UK composting industry in 2007/08 is thus calculated to be of the order of £166 million. This is an increase of 44% on the 2006/07 figure, although we believe the majority of this apparent increase is actually due to the more accurate method of calculation this year.**

**Table 4** Turnover for the UK composting industry, 2007/08 and 2006/07

Turnover band	Number of companies (survey respondents only)		% of total responding companies in each band		Total estimated turnover per band	
	2007/08	2006/07	2007/08	2006/07	2007/08	2006/07
Less than £10,000	11	11	11%	11%	£55,000	£55,000
£10,000 - £50,000	12	17	12%	16%	£360,000	£510,000
£50,000 - £100,000	8	10	8%	10%	£600,000	£750,000
£100,000 - £500,000	32	30	31%	29%	£9.6 million	£9.0 million
£500,000 - £1 million	15	17	15%	16%	£11.3 million	£12.8 million
More than £1 million	-	20	-	19%	-	£40 million
£1 million - £3 million	16	-	16%	-	£32 million	-
More than £3 million*	9		9%		£41.5 million	
<i>Total for respondents providing turnover information</i>	<i>103</i>	<i>105</i>	<i>100%</i>	<i>100%</i>	<i>£95.4 million</i>	<i>£63 million</i>
Estimate for survey respondents not providing turnover information					£2.3 million	£10 million
Estimate for survey non respondents					£68.1 million	£41.7 million
<b>Total estimated turnover for UK composting industry</b>					<b>£165.8 million</b>	<b>£114.8 million</b>

\* To provide a specific turnover figure for firms responding in the 'more than £10 million' turnover category, the input and output tonnages were checked against the indicative gate fees for the relevant processes. On this basis we have concluded there may be an over-estimate in this reported turnover category for turnover deriving specifically from composting activities, and we have scaled the estimate back to a presumptive average compost-related turnover of £5 million per firm.

#### 4.1.3 Employment in the UK composting industry

Composting companies were asked to provide information on how many full time equivalent (FTE) staff they employed in the composting and biological treatment aspects of their business. This could cover more than one site where a single company operated multiple composting sites. Bands were provided (see Table 5) on the survey form. The most common of these was the 1 to 5 FTE band with over half of companies falling into this category.

The overall employment in the UK composting industry was estimated from the survey results. The one survey respondent choosing not to answer the question on employment was allowed for by assuming that the staff numbers per quantity of input source segregated waste were the same as the average for those answering the question on employment. Survey non respondents were allowed for by assuming the same

scaling factor based on their municipal waste inputs as described in Section 3.2.

Again, it will be interesting to observe whether the ratio of employment to site throughput varies in future years. As it is anticipated that there will be an increase in anaerobic digestion and in-vessel composting in order to treat greater quantities of food waste, these technological solutions may well require proportionally less man power than current open-windrow systems. Evidence for this may already be emerging from this year's survey – the results show that composting efficiency (tonnes composted per employee; tpe) averages 3,330 tpe in 2007/08 compared to 2,789 tpe in 2006/07. From the survey data provided it is not possible to break this down to efficiency ratings per type of process (because employment data is provided company wide while processes are reported per site). However, future surveys could seek to clarify this information in greater detail.

**Table 5** Employment in the UK composting industry 2007/08 and 2006/07

Band	Number of operators (survey respondents only)		FTE employment	
	2007/08	2006/07	2007/08	2006/07
Less than 1	12	13	6	7
1 to 5	58	72	174	216
6 to 10	14	13	112	104
11 to 20	16	13	248	202
More than 20	6	10	253	355
<i>Total for respondents providing employment information</i>	<i>106</i>	<i>121</i>	<i>793</i>	<i>884</i>
Estimate for respondents not answering this question			4	0
Estimate to allow for survey non respondents			554	504
<b>Total FTE employment in UK composting industry</b>			<b>1,351</b>	<b>1,387</b>

**The overall employment in the UK composting industry in 2007/08 is estimated at approximately 1,350 FTE staff, similar to 2006/07 figure and an increase of 13% on the 2005/06 figure.**

In addition to these employment estimates there were also found to be considerable volunteer and trainee opportunities in the community composting sector. This is covered by the Defra funded project looking at community composting activity in the UK in 2006 (see Appendix 2 for further information about this project).

#### *4.1.4 Number of composting sites operated by survey respondents*

Survey respondents were asked how many composting / biological treatment sites<sup>2</sup> their company operated in the UK in 2007/08. Approximately 80% of companies surveyed were operating single sites, while 17% of companies operated between two and 10 sites. Three of the companies surveyed operated more than 10 sites. This shows the sector is fragmented, with the majority of companies operating single sites. As experience is gained, this situation may change in the future, as companies seek to diversify their operations and expand.

<sup>2</sup> It should be noted that the interpretation of 'site' was left to respondents, and in one case where a respondent reported operating 60 sites in Scotland, we re-allocated this record to conform to one site, as data for this location was reported in aggregate and appeared to relate to a single extended agricultural operation. A clearer definition of what constitutes a separate 'site' will be included in the next survey to make it easier for respondents to interpret this term consistently.

**Table 6** Number of composting sites operated by survey respondents in the UK, 2007/08

#### 4.1.5 Sites operating under a waste management licence or permit

For each site they operated, survey respondents were asked if in 2007/08 this site was operating under a waste management licence or permit (see Table 7). Two thirds of the sites operated in 2007/08 (67%) were operating under a waste management licence or permit and almost one third of the sites (32%) were operating under exemption. This question was new to the 2007/08 survey.

Number of sites operated	Number of companies 2007/08	% of total companies 2007/08
1	86	80%
2	8	7%
3	2	2%
4	2	2%
5	2	2%
6	1	1%
7	3	3%
>10	3	3%
Unspecified	0	0%
<b>Total</b>	<b>107</b>	<b>100%</b>

**Table 7** Composting sites operating under and waste management licence or permit, 2007/08

Site operating under licence or permit	Number of sites	% of sites
Yes	137	67%
No	65	32%
Unspecified	2	1%
<b>Total</b>	<b>204</b>	<b>100%</b>

As almost one third of the responding companies operated under an exemption, which places limits on the quantities of waste that can be treated at any one time (i.e., most sites will be processing small tonnages), this may well dictate the way in which the sites are operated and how the resultant product is marketed and used. In particular, it seems likely that such sites would not participate in the BSI PAS 100 and Compost Quality Protocol certification scheme due to the fixed costs and processing requirements

involved. As a result, the recycled organics produced at these sites seem likely to remain classed as waste, thereby being subject to regulatory control.

Table 8 compares turnover with the status of the site (licensed or exempt). The majority of licensed sites (53%) were operated by companies with turnovers in excess of £1 million, whereas 44% of companies operating exempt sites reported turnovers less than £1 million.

A new environmental permitting regime was introduced in England and Wales on the 6 April 2008 (after the period covered by this survey). Revisions to the composting exemption criteria are expected to change in due course, therefore it will be interesting to note whether a greater proportion of sites operate under a permit in subsequent years.

**Table 8** Turnover for the UK composting industry by sites being licensed or exempt, 2007/08

Turnover band	Yes, site was licensed/permitted			No, site was exempt		
	Count of sites	%	Cumulative %	Count of sites	%	Cumulative %
Less than £10,000	9	7%	7%	3	5%	5%
£10,000 - £50,000	2	1%	8%	15	23%	27%
£50,000 - £100,000	3	2%	10%	5	8%	35%
£100,000 - £500,000	28	21%	31%	6	9%	44%
£500,000 - £1 million	18	13%	44%	2	3%	47%
£1 million - £3 million	32	24%	68%	5	8%	55%
More than £3 million	39	29%	96%	4	6%	61%
Unspecified	5	4%	100%	26	39%	100%
<b>Total</b>	<b>136</b>	<b>100%</b>		<b>66</b>	<b>100%</b>	

#### 4.1.6 Types of composting sites operated by survey respondents

Survey respondents were asked to categorise the nature of their sites using a pre-defined list on the survey form (see Table 9a). Approximately half (53%) of the composting sites operated by survey respondents were described as dedicated composting / biological treatment sites and a quarter of the sites (25%) were described as farms. Just 11% of sites were described as landfill sites. The remaining 11% of sites came under a variety of site type classifications. It should be noted that some of the dedicated composting sites were actually located on other types of sites such as farms or landfill sites but were classified by their operators as dedicated composting

sites because they operated independently of the farm or landfill business. These latter sites may well be those operated under an exemption (especially on farms), and encompass the large number of small processes with small annual throughputs. These third-party sites represent a different business model to the larger sites, where organics recycling takes place at a dedicated site.

Table 9b shows the contrasting profiles of sites with licences compared to exempt sites. Permitted sites were predominantly specialised composting or biological treatment sites, while exempt sites were predominantly farms.

**Table 9a** Types of composting sites operated by survey respondents in the UK, 2007/08 and 2006/07

Site type	Number of sites 2007/08	% of total sites 2007/08	Number of sites 2006/07	% of total sites 2006/07
Dedicated composting / biological treatment site	108	53%	107	49%
Farm	50	25%	56	25%
Landfill site	23	11%	29	13%
Materials recycling facility	5	2%	7	3%
Horticultural / landscaping activities	7	3%	7	3%
Civic amenity site	2	1%	3	<2%
Community based project	3	1%	2	1%
Other	6	3%	9	4%
<b>Total</b>	<b>204</b>	<b>100%</b>	<b>222</b>	<b>100%</b>

**Table 9b** Types of composting sites operated by waste management licence/permit in the UK, 2007/08

	Yes, site was licensed/ permitted		No, site was exempt		Total	
	Count of sites	%	Count of sites	%	Count of sites	%
Dedicated composting / biological treatment site	93	68%	13	20%	106	52%
Farm	11	8%	40	61%	51	25%
Landfill site	20	15%	2	3%	22	11%
Materials recycling facility	4	3%	1	2%	5	2%
Horticultural / landscaping activities	1	1%	6	9%	7	3%
Civic amenity site	2	1%	0	0%	2	1%
Community based project	0	0%	3	5%	3	1%
Other - please specify	5	4%	1	2%	6	3%
<b>Total</b>	<b>136</b>	<b>100%</b>	<b>66</b>	<b>100%</b>	<b>202</b>	<b>100%</b>

#### 4.1.7 Location of composting sites

The location of composting sites operated by survey respondents are summarised in Table 10. Approximately 78% of the sites covered by the

2007/08 survey were in England. This is 15 sites fewer than were covered by the survey in 2006/07. Site coverage in Scotland, Wales and Northern Ireland remained similar for the two surveys.

**Table 10** Location of composting sites operated by survey respondents in UK, 2007/08 and 2006/07

Country / region	Number of sites 2007/08	% of total sites 2007/08	Number of sites 2006/07	% of total sites 2006/07
East Midlands	19	9%	20	9%
East of England	25	12%	24	11%
London	8	4%	4	2%
North East	8	4%	9	4%
North West	13	6%	17	8%
South East	28	14%	30	14%
South West*	37	18%	40	18%
West Midlands	14	7%	18	8%
Yorkshire & the Humber	8	4%	13	6%
<b>Total England</b>	<b>160</b>	<b>78%</b>	<b>175</b>	<b>80%</b>
<b>Wales</b>	<b>9</b>	<b>4%</b>	<b>10</b>	<b>4%</b>
North Scotland	4	2%	14	6%
South Scotland**	28	14%	17	8%
<b>Total Scotland</b>	<b>32</b>	<b>16%</b>	<b>31</b>	<b>14%</b>
<b>Northern Ireland</b>	<b>3</b>	<b>1%</b>	<b>4</b>	<b>2%</b>
Unspecified	0	0%	2	<1%
<b>UK TOTAL</b>	<b>204</b>	<b>100%</b>	<b>220</b>	<b>100%</b>

\* In the South West one company sent in a single site record in 2006/07 which covered 25 sites and a single site record in 2007/08 which covered 26 sites. These have been included in the results as 25 and 26 sites.

\*\* In South Scotland one company sent in a single site record in 2007/08 which covered 60 sites. This has now been included in the results as one extended site although it is evident from the survey return that the site contains operations at a range of different locations within it.

#### 4.1.8

#### 4.1.9 Source of waste recycled

The majority of sites, 86%, solely recycled organic waste which was brought in from outside the site (imported from off site). This was 2% more than in 2006/07 and the number of sites using both feedstock

brought in from outside the site and feedstock produced on the site remained similar in both years. However, this still shows that the vast majority of sites have been established to treat *ex-situ* wastes, rather than being established as on-site treatment facilities.

**Table 11** Source of composting feedstock at sites operated by survey respondents in the UK, 2007/08 and 2006/07

Composting feedstock	Number of sites 2007/08	% of sites 2007/08	Number of sites 2006/07	% of sites 2006/07
Produced on site	7	3%	6	3%
Imported from off site	176	86%	186	84%
Both	21	10%	24	11%
Unspecified	0	0%	6	3%
<b>Total</b>	<b>204</b>	<b>100%</b>	<b>222</b>	<b>100%</b>

#### 4.1.10 Animal By-Products Regulations

Approximately 15% of composting sites (31 sites) in the survey had full approval under the Animal By-Products Regulations (ABPR; the same proportion as in 2006/07), with a further 8% (16 sites) being under discussion as regards to the Regulations (Table 12). It is interesting to note that there was a decrease in four sites under discussion from 2006/07 to 2007/08, a decrease in the number of plants under verification by three, and an increase in four sites that had full approval between the two survey years. These data

only suggest that a further four new sites received full approval by Animal Health (the ABPR approvals body) during 2007/08. However, more sites may have been approved that were not captured by this survey.

There has also been a continuing majority (75% in both 2006/07 and 2007/08) of sites not considering seeking approval under the ABPR. This is not surprising as over 75% of the waste treated was sourced from gardens and parks (Table 14) which does not require approval under the ABPR.

**Table 12** Sites coming under the Animal By-Products Regulations, 2007/08 and 2006/07

Animal By-Products Regulations	Number of sites 2007/08	% of total sites 2007/08	Number of sites 2006/07	% of total sites 2006/07
Site has full approval	31	15%	27	12%
Under discussion	16	8%	20	9%
In verification	3	1%	6	3%
Not under consideration	154	75%	166	75%
Unspecified	0	0%	1	2%
<b>Total</b>	<b>204</b>	<b>100%</b>	<b>222</b>	<b>100%</b>

#### 4.1.11 PAS 100 Certification and the Quality Protocol

Nearly one third (30%) of the sites covered in the 2007/08 survey were fully certified under the PAS 100 scheme, showing an increase of 15% between 2006/07 and 2007/08 in the number of sites being fully certified captured by the survey. There has also been a corresponding 8% decrease between 2006/07 and 2007/08 in the number of sites working towards PAS 100 certification (Table 13a). This survey captures very closely with the data recorded by AFOR on all the sites fully PAS 100 certified in 2008 and as

working towards certification in 2008. For example the AFOR records show 53 sites PAS100 certified as of the end of March 2008, compared to the 62 sites reported by companies in our survey (the discrepancy can be accounted for by respondent recall of the precise site status as of the accounting year end). Overall, from our survey a total of 113 sites were seeking, or had gained, certification to PAS 100 in 2007/08, compared with 106 in the previous year. Note that since the survey was completed, there has been a considerable further increase in the level of site certification, a trend which should be confirmed in future surveys.

The Compost Quality Protocol (CQP) was launched by WRAP and the Environment Agency in mid-March 2007, just before the start of this survey period. The returns to this survey indicate that a total of 43 sites achieved certification during 2007/08, which represents 16% of the total number of sites covered by this survey, or 38% of those sites who indicated they were seeking certification. A further 48% of those seeking certification were working towards certification (Table 13b). A figure of 16% may appear low at first glance, however, when it is considered that the CQP was only applicable in England and Wales, and is unlikely to have been applied to many sites processing less than 5,000 tonnes a year, this increases to 33% (base: 130 sites composting above 5,000 tonnes a year). When the throughput of these sites is taken into account, 36% (977,000 tonnes) of the total quantity of compost produced in the UK from source segregated feedstock during 2007/08 was certified to BSI PAS 100 and among which, 72% (702,000) was certified under the Quality Protocol (26% of the national total compost product) (see Section 4.3.1). Given the certification process and the protocol were both new concepts, and systems had to

be developed and implemented to accommodate the additional requirements of the CQP, this is a positive outcome and illustrates the increasing professionalism of the sector.

This question regarding the quality protocol was new to the 2007/08 survey. As above, this survey appears to over-state the CQP certification at the time of completion, in that 43 sites are reported fully certified and 54 working towards certification (97 total) while AFOR records show that as of 31 March 2008 only 8 sites were fully certified while 86 were working towards certification (94 total). Again this discrepancy is most likely to reflect respondent recall about the precise time of certification. The overall message from the survey remains that the industry is making rapid and continuing headway towards certification for the specified standards.

Table 13b shows that an estimated 2.9m tonnes of organic waste is input to sites certified or working towards the CQP; this is 87% of the waste input to the PAS100 certified sites or sites working towards PAS100.

**Table 13a** Sites certified or working towards certification under the PAS 100 scheme, 2007/08 and 2006/07

<b>PAS 100 Certification</b>	<b>Number of sites 2007/08</b>	<b>% of total sites 2007/08</b>	<b>Number of sites 2006/07</b>	<b>% of total sites 2006/07</b>
Site / processes fully PAS 100 certified	62	30%	33	15%
Site / processes working towards PAS 100 certification	51	25%	73	33%
Site / processes not certified or working towards certification	91	45%	112	50%
Unspecified	0	0%	4	2%
<b>Total</b>	<b>204</b>	<b>100%</b>	<b>222</b>	<b>100%</b>

**Table 13b** Sites certified or working towards certification under the Quality Protocol, 2007/08

<b>Quality Protocol Certification</b>	<b>Number of sites 2007/08</b>	<b>% of total sites 2007/08*</b>	<b>Estimated quantity collected ('000 tonnes)</b>	<b>% of total collected tonnes</b>
Site / processes fully certified under Quality Protocol	43	38%	1,465	44%
Site / processes working towards certification under Quality Protocol	54	48%	1,453	43%
Site / processes not certified or working towards certification	12	11%	336	10%
Unspecified	4	3%	111	3%
<b>Total</b>	<b>113</b>	<b>100%</b>	<b>3,365</b>	<b>100%</b>

\*Proportion is only for sites certified or working towards certification under the PAS 100 scheme

## 4.2 Composting and other biological treatment of source segregated wastes

### 4.2.1 *Quantities and types of source segregated organic waste recycled in 2007/08*

The survey asked about the quantities and types of source segregated waste which were recycled through composting or other biological treatment. Scaling up of the survey results to allow for non respondents was carried out as described in Section 3.2.

**The total quantity of source segregated waste composted or biologically treated in the UK in 2007/08 was estimated to have been 4.5 million tonnes. Of this 88% (3.9 million tonnes) was municipal waste and 12% (538,000 tonnes) was non municipal waste. This equates to an increase of 9% on the revised estimate of 4.1 million tonnes of total source segregated waste composted in 2006/07.**

Figure 1 shows the trend in the quantity of organic waste composting in the UK from 1994 up to and including the current 2007/08 data. Where data were available, municipal and non municipal wastes input to composting are shown separately. Over the previous four years' data, up until 2006/07 there had been a sizable year-on-year increase in the overall quantity composted, with municipal waste composting increasing more than non municipal waste composting. The figures between 2006/07 and 2007/08 show both municipal waste and non municipal waste composting continuing the earlier trend of an increasing overall quantity composted with municipal waste composting increasing more than non municipal waste composting.

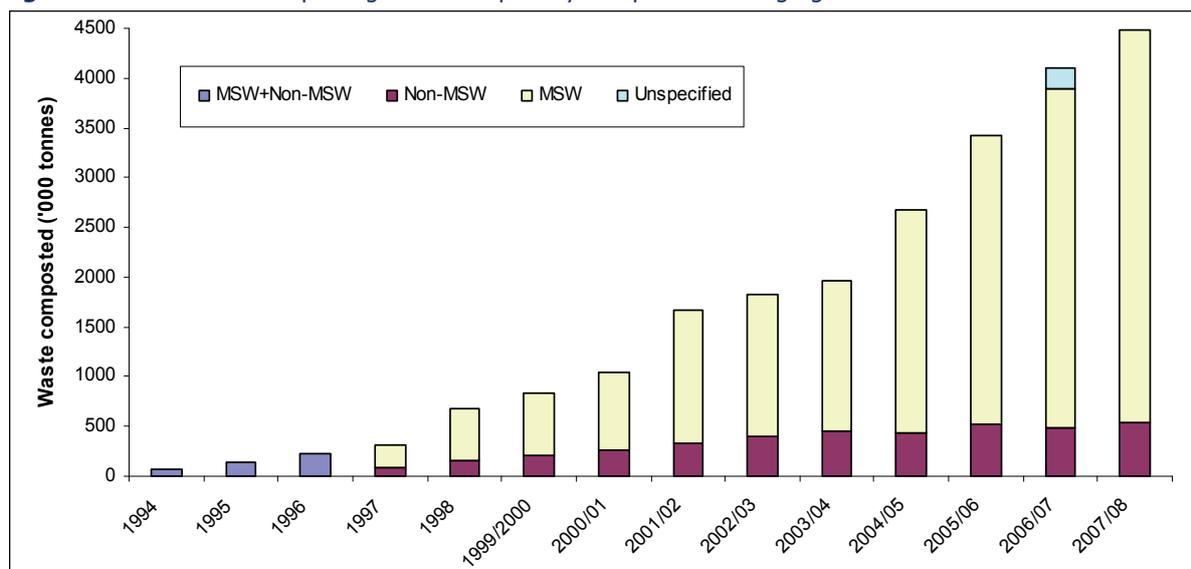
It seems likely that this was a combination of factors: an increase in the landfill tax from £21 to £24 a tonne from 2006/07 to 2007/08, respectively, and the targets set for local authorities to recycle and divert

biodegradable municipal waste from landfill. It will be interesting to see how the ratio of non-municipal to municipal waste composted changes in the future after the introduction of the £8-a-year landfill tax escalator in 2008/09.

Table 14 shows the type and quantity of waste composted in 2007/08 with data from 2006/07 also shown for comparison. Just under half (45%) of the municipal waste composted in 2007/08 was taken from Civic Amenity (CA) sites with approximately 47% coming from kerbside collections. Compared with 2006/07, there has been a 6% increase in the quantity of municipal waste composted in the UK which corresponds to an additional 540,000 tonnes. The relative proportions of different municipal waste types being composted have stayed very similar with almost identical percentages of CA site and kerbside garden waste only collections in 2006/07 and 2007/08. The proportion of non municipal waste in 2007/08 has remained exactly the same as in 2006/07 at 12%. There has been a 6% decrease in unspecified waste inputs between 2006/07 and 2007/08 which accounts for the 6% increase in municipal waste identified in 2007/08.

The data reported in Figure 1 and Table 14 take some account of the waste composted by the community sector through the few community organisations responding to this survey. However we estimate there may be an additional 15,000 tonnes composted by community sector organisations that are not captured here. This estimate is based on the results of the separate Defra funded project (WR0211) "Unlocking the potential of community composting". The study estimated that 21,500 tonnes composted by community sector in the calendar year 2006. Whilst no corresponding study of the community composting sector was conducted in 2007 or 2008, it is expected that community composting activity in 2007/08 is likely to have been approximately the same as in 2006.

**Figure 1** Growth in UK composting based on quantity of input source segregated waste material\*



\* Data for 2006/07 have been revised using a refined gross-up methodology and therefore may differ to those reported in the 2006/07 report.

The data in Table 14 indicate that there has been an increase in the quantities of municipal food waste collected at the kerbside, principally co-collected with garden waste (an increase of 93,000 tonnes of food and garden waste collected together). Surprisingly, the quantities of food waste collected separately from households decreased by 12,000 tonnes, as did the quantities of non-municipal food processing by-products and food waste from retailers (a 15,000 tonne decrease). This relatively small increase in green and food waste composted may be a result of the low number of newly approved facilities under the ABPR (Table 12), which could well be a rate-limiting-step. Again, as the landfill tax increases, this situation may change in the future.

Table 15 shows the quantity of source segregated waste processed by main business activities of composting companies responding to the surveys in 2007/08 and 2006/07. In 2007/08, half of the source segregated waste was processed by companies classifying themselves as compost producer / biological treatment industry, as was found in 2006/07 and just over a third (35%) was processed by solid waste treatment / disposal companies (again, similar to 2006/07). This shows the situation in 2007/08 remains very similar to that of 2006/07 with regards to the proportion of source segregated waste being processed by main business activities. There has however been a 4% decline in the quantity of source segregated waste between 2006/07 and 2007/08 being processed by agricultural activities, which may be a result of increased record keeping and permitting / licensing requirements.

Of the 4,476,000 tonnes of source segregated organic waste processed in 2007/08 over two fifths (43%) was processed by the 25% largest companies (upper quartile) with compost related turnovers of over £1 million. This is a decrease in business share of 10% compared to 2006/07 and indicates a shift away from larger producers towards medium sized producers (Table 16). However producers within the £1 million - £3 million turnover band processed the most source segregated waste in 2007/08 (27%). For the smaller companies at the lowest end of the turnover range (i.e., with compost related turnovers of less than £100,000), the quantity of source segregated waste processed in 2007/08 was approximately 11%. This is about the same as in 2006/07 which shows the transfer of growth has been in the middle band turnover at the expense of larger band turnover companies. There has been an increase in business share of 13% towards medium sized producers with compost related turnovers between £100,000 to £1 million between 2006/07 and 2007/08.

This situation may well change in the future as a greater number of sites seek to process food waste through either in-vessel composting or anaerobic digestion, both of which attract greater gate fees due to the higher capital and operational costs (AD also attracts income from the sale of renewable energy). In addition, the economics may also change as the landfill tax increases at the £8 a year escalator.

The majority (67%) of source segregated waste processed in 2007/08 was from companies that categorised the nature of their sites as dedicated composting / biological treatment sites (an increase

from 58% in 2006/07). This probably reflects the specialisation of the sector in order to meet the increasingly complex regulatory and customer requirements. A further 12% was from sites described

as landfill sites (a decrease from 19% in 2006/07) and a further 10% was from sites described as farms (Table 17).

**Table 14** Quantity and type of wastes composted in the UK, 2007/08 and 2006/07 \* Data for 2006/07 have been revised using a refined gross-up methodology and therefore may differ to those reported in the 2006/07 report.

	2007/08			2006/07*		
	Estimated total collected ('000 tonnes)	% of total collected	% of total collected by waste category	Estimated total collected ('000 tonnes)	% of total collected	% of total collected by waste category
<b>Municipal waste</b>						
Garden waste from civic amenity/bring sites	1,773	40%	45%	1,602	39%	48%
Garden waste only from kerbside collection	1,414	31%	36%	1,210	29%	35%
Garden and kitchen waste from kerbside collection	435	10%	11%	342	8%	10%
Kitchen waste only from kerbside collection	14	<1%	<1%	16	<1%	<1%
Council parks / gardens waste and green waste from educational institutes	68	1%	2%	77	2%	2%
Council-collected food processing by-products and food waste from retailers	8	<1%	<1%	44	1%	1%
Other municipal waste	225	5%	6%	103	2%	3%
<b>Total municipal waste</b>	<b>3,937</b>	<b>88%</b>	<b>100%</b>	<b>3,394</b>	<b>82%</b>	<b>100%</b>
<b>Non municipal waste</b>						
Landscape / grounds maintenance	156	4%	29%	170	4%	35%
Forestry / timber / bark / by-products	2	<1%	<1%	24	1%	5%
Food processing by-products and food waste from retailers	197	4%	37%	212	5%	43%
Other non municipal waste	183	4%	34%	86	2%	17%
<b>Total non municipal waste</b>	<b>538</b>	<b>12%</b>	<b>100%</b>	<b>491</b>	<b>12%</b>	<b>100%</b>
<b>UNSPECIFIED WASTE INPUT</b>	<b>&lt;1</b>	<b>&lt;1%</b>	<b>-</b>	<b>218</b>	<b>6%</b>	<b>-</b>
<b>TOTAL INPUT WASTE</b>	<b>4,476</b>	<b>100%</b>	<b>-</b>	<b>4,103</b>	<b>100%</b>	<b>-</b>

**Table 15** Quantity of source segregated waste processed by main business activity, 2007/08 and 2006/07

Main business activity	Quantity composted 2007/08 ('000 tonnes)	% of total composted 2007/08	Quantity composted 2006/07 ('000 tonnes)*	% of total composted 2006/07
Compost producer / biological treatment	2,305	51%	2,048	50%
Agricultural activities	279	6%	398	10%
Solid waste treatment / disposal company	1,564	35%	1,386	34%
Local authority	175	4%	180	4%
Horticultural / landscaping activities	41	1%	58	1%
Water treatment company	0	0%	25	1%
Community group / not-for-profit business	<1	0%	<1	<1%
Equipment / plant supplier / hire company	28	1%	8	<1%
Other	84	2%	0	0%
Unspecified	0	0%	0	0%
<b>Total</b>	<b>4,476</b>	<b>100%</b>	<b>4,103</b>	<b>100%</b>

\* Data for 2006/07 have been revised using a refined gross-up methodology and therefore may differ to those reported in the 2006/07 report.

**Table 16** Quantity of source segregated waste processed by turnover, 2007/08 and 2006/07

Turnover band	Quantity composted 2007/08 ('000 tonnes)	% of total composted 2007/08	Quantity composted 2006/07 ('000 tonnes)*	% of total composted 2006/07
Less than £10,000	147	3%	16	<1%
£10,000 - £50,000	158	4%	254	6%
£50,000 - £100,000	194	4%	153	4%
£100,000 - £500,000	984	22%	545	13%
£500,000 - £1 million	902	20%	658	16%
More than £1 million	-	-	2,186	53%
£1 million - £3 million	1,202	27%	-	-
More than £3 million	722	16%	-	-
Unspecified	169	4%	291	7%
<b>Total</b>	<b>4,476</b>	<b>100%</b>	<b>4,103</b>	<b>100%</b>

\* Data for 2006/07 have been revised using a refined gross-up methodology and therefore may differ to those reported in the 2006/07 report.

**Table 17** Quantity of source segregated waste processed by type of site, 2007/08 and 2006/07

Site type	Quantity composted 2007/08 ('000 tonnes)	% of total composted 2007/08	Quantity composted 2006/07 ('000 tonnes)*	% of total composted 2006/07
Dedicated composting / biological treatment site	3,007	67%	2,518	61%
Farm	453	10%	484	12%
Landfill site	556	12%	544	13%
Materials recycling facility	118	3%	121	3%
Horticultural / landscaping activities	42	1%	39	1%
Civic amenity site	21	<1%	23	1%
Community based project	<1	<1%	<1	<1%
Other - please specify	279	6%	259	6%
Unspecified	0	0%	116	3%
<b>Total</b>	<b>4,476</b>	<b>100%</b>	<b>4,103</b>	<b>100%</b>

\* Data for 2006/07 have been revised using a refined gross-up methodology and therefore may differ to those reported in the 2006/07 report.

#### 4.2.2 Quantities of waste composted by individual sites

Of the sites surveyed in 2007/08 there were a considerable number of mid range size sites, with 58% of all sites in the survey composting between 10,000 and 50,000 tonnes of waste (an increase from 51% in 2006/07). There was also a large number of smaller composting sites with 21% of sites composting fewer than 5,000 tonnes per annum (a decrease from 23% in 2006/07). There were very few sites (only 4%) which composted more than 50,000 tonnes in 2007/08 and 2006/07 (Table 18a).

The majority of waste composted (74%) in the UK in 2007/08 was found to be from the mid range sized composting sites that were composting between 10,000 and 50,000 tonnes. The 17% smaller sites (composting less than 5,000 tonnes of source segregated waste) were found to be treating only 3% of the total amount of waste composted in the UK in 2007/08 (Table 18b). At the other end of the spectrum, while only 3% of sites took more than 50,000 tonnes per site, these took 17% of the total waste input, and altogether the 70% of sites above 10,000 tonnes account for 91% of the total waste input. These results broadly accord with the Pareto principle in market analysis, where the largest proportion of business volume is accounted by the small numbers of larger producers.

As the majority of the organic waste was composted at sites accepting between 10,000 to 50,000 tonnes a year, this implies there is a balance between economies of scale (which would tend to increase site capacity in order to off-set fixed costs) and other factors that may limit site size (e.g. transport, and boundary / neighbour issues). It is interesting to note

that the returns to this survey do not reflect the practical economic site size of 50,000 tonnes a year for both windrow and in-vessel composting modelled by AEA Technology for DEFRA<sup>3</sup>.

<sup>3</sup> DEFRA (2007) *Economies of Scale - Waste Management Optimisation Study* by AEA Technology

**Table 18a** Number of sites processing source segregated waste in the UK by waste input band, 2007/08 and 2006/07

Source segregated waste input to site (tonnes)	Number of sites 2007/08	% of total sites 2007/08	Number of sites 2006/07	% of total sites 2006/07
Less than 5,000	43	21%	51	23%
5,000 - 10,000	24	12%	36	16%
10,000 – 50,000	118	58%	114	51%
50,000 - 100,000	8	4%	6	3%
Unspecified	11	5%	15	7%
<b>Total</b>	<b>204</b>	<b>100%</b>	<b>222</b>	<b>100%</b>

**Table 18b** Quantity of source segregated waste processed by in the UK by waste input band, 2007/08 and 2006/07

Source segregated waste input to site (tonnes)	Quantity composted 2007/08 (000's tones)	% of total composted 2007/08	Quantity composted 2006/07 (000's tones)*	% of total composted 2006/07
Less than 5,000	141	3%	160	4%
5,000 - 10,000	282	6%	428	10%
10,000 – 50,000	3,288	74%	2,984	73%
50,000 - 100,000	765	17%	531	13%
<b>Total</b>	<b>4,476</b>	<b>100%</b>	<b>4,103</b>	<b>100%</b>

\* Data for 2006/07 have been revised using a refined gross-up methodology and therefore may differ to those reported in the 2006/07 report.

#### 4.2.3 Composting methods used

The composting methods used at individual composting sites for source segregated waste (i.e. excluding mixed waste MBT processes) in 2007/08 are summarised in Table 19. More than one composting method was used at some sites. The results are very

similar for both 2007/08 and 2006/07. The vast majority of sites 86% in 2007/08 and 81% in 2006/07 used open air mechanically turned windrow composting. Approximately 9% of sites composted in-vessel in both years.

**Table 19** Percentage of sites using different organics treatment processes for source segregated waste in the UK, 2007/08 and 2006/07

Treatment method	Number of sites 2007/08*	% of total sites 2007/08	Number of sites 2006/07*	% of total sites 2006/07
Open air mechanically turned windrow	166	86%	180	81%
In-vessel composting	23	12%	19	9%
Static pile with aeration	5	3%	2	<1%
Table composting	3	2%	6	3%
Covered mechanically turned windrow	0	0%	1	<1%
Thermophillic aerobic digestion	1	1%	1	<1%
Anaerobic digestion	1	1%	1	<1%
Other	2	1%	0	0%
Unspecified / no source segregated input	11	5%	12	5%
<b>Total</b>	<b>204**</b>	<b>-</b>	<b>222</b>	<b>-</b>

\* Multiple composting methods may be used at a single site therefore numbers will not total exactly to 100%.

\*\*Note that only 193 out of the 204 sites reported to compost or digest source segregated waste at their sites during 2007/08, and only 211 out of 222 in 2006/07.

Estimates of the quantities of source segregated waste composted using each method were calculated. These estimates are shown in Table 20. For the small number of sites where more than one composting method was used, the different methods were assumed to compost equal proportions of the wastes input at those sites.

**An estimated 78% of source segregated waste was composted by open air mechanically turned windrow**

**(broadly the same as the 79% in 2006/07) and 16% by in-vessel composting (up from 11% in 2006/07). Between them, these two composting methods are therefore estimated to have accounted for 94% of all composting of source segregated waste in 2007/08, again broadly similar to the 90% 2006/07.**

**Table 20** Source segregated wastes composted by different processes in the UK, 2007/08 and 2006/07

Treatment Method	Quantity treated 2007/08 ('000 tonnes)	% of total waste treated 2007/08	Quantity treated 2006/07 ('000 tonnes)*	% of total waste treated 2006/07
Open air mechanically turned windrow	3,472	78%	3,252	79%
Covered mechanically turned windrow	0	0%	20	<1%
In-vessel composting	732	16%	441	11%
Static pile with aeration	98	2%	2	<1%
Table	137	3%	185	5%
Anaerobic digestion	17	<1%	4	<1%
Thermophilic aerobic digestion	<1	0%	11	<1%
Other	5	<1%	0	0%
Not specified	15	<1%	188	5%
<b>Total</b>	<b>4,476</b>	<b>100%</b>	<b>4,103</b>	<b>100%</b>

\* Data for 2006/07 have been revised using a refined gross-up methodology and therefore may differ to those reported in the 2006/07 report.

The 3,472,000 tonnes processed at in open air turned windrow systems (Table 20) correspond to the estimated 3,413,000 tonnes of non-ABPR green waste collected (Table 14). This indicates that the organics recycling sector remains dominated by relatively simple windrow systems processing green waste. However, there was an increase of 291,000 tonnes of material

composted in-vessel (IVC) between 2006/07 and 2007/08 to give a total of 732,000 tonnes. This is greater than the quantities of food waste collected (either separately or mixed with green waste) from all sources (654,000 tonnes from municipal and non municipal; Table 14), suggesting that IVC is being used to treat some non-food waste sources.

### 4.3 Compost products from source segregated waste

#### 4.3.1 Types and quantities of different compost products

**The quantity of compost produced from source segregated feedstock has increased from 2.46 million tonnes in 2006/07 to 2.69 million tonnes in 2007/08. This is an increase of approximately 9% (230,000 tonnes).**

**Overall, 36% (977,000 tonnes) of the total quantity of compost produced in the UK from source segregated feedstock during 2007/08 was certified to BSI PAS 100 of which 72% (702,000) was certified under the Quality Protocol (26% of the national total compost product).**

The increase in compost produced from source segregated feedstocks continues the trend shown in recent years (Table 21a and Figure 2). The quantity of compost produced in the UK has more than doubled over the five year period between 2003/04 and 2007/08. As discussed in Section 4.1.10, the observation that just over a quarter of all composted material was certified to the Compost Quality Protocol (CQP) during 2007/08 is noteworthy, and means that this product was no longer classed as a waste and was not subject to regulatory control. This is no mean feat considering the CQP only came into effect during mid March 2007 (just before the onset of this survey period), that it is only applicable in England and Wales, and that both compost producers and AFOR needed to implement new operating systems and record keeping processes.

Of the 2,686,000 tonnes of quantity produced in the UK from source segregated feedstock during 2007/08, approximately 36% (977,000 tonnes) was certified to BSI PAS 100 of which 72% (702,000) was certified under the Quality Protocol. This is equivalent to 26% of the national total compost product (Table 21b).

The most common product in 2007/08 was soil conditioner which accounted for 71% by weight of all compost products. The proportion of soil conditioner for the 2007/08 survey is very similar to the 73% estimated by the 2006/07 survey and identical to the survey in 2005/06 which also estimated a proportion of 71%, although there was a recorded increase of just over 100,000 tonnes. There is however a marked difference in the 2004/05 survey which measured the proportion of soil conditioner to be only 37%. In the light of a low response rate in 2004/05, it could be that the respondents to the 2004/05 survey were not representative, in terms of product proportions, of the composting industry as a whole in that year. Therefore since 2003/04, there has been a general increase in the quantities of compost used in topsoil / subsoil manufacture, in growing media, and in soil conditioner if the 2004/05 estimates are discounted.

The second largest increase in product corresponded to the manufacture of growing media, which accounted for an increase of 57,000 tonnes between 2006/07 and 2007/08. This is a technically demanding sector, which stands to gain the most from the introduction of the CQP. Given that this is generally a high value - low volume sector, comprising complex supply chains, it is encouraging to see its continued growth. The use of composted materials in growing media formulations is being driven by the 90% peat replacement target for 2010 in the UK's Biodiversity Action Plan<sup>4</sup>, and has been helped by the development of the Growing Media Specification<sup>5</sup>.

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<sup>4</sup> See: <http://www.ukbap.org.uk/>

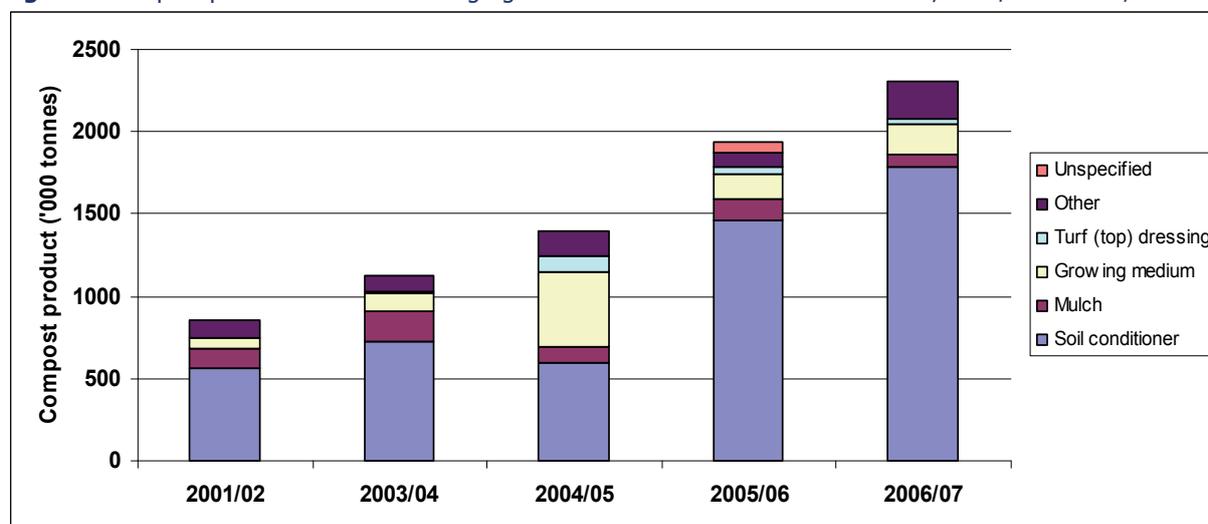
<sup>5</sup> WRAP (2004) *Guidelines for the specification of composted green materials used as a growing medium component*

**Table 21a** Compost products from source segregated feedstock manufactured in the UK, 2003/04 to 2007/08

Product	2007/08	2006/07	2005/06	2004/05	2003/04
	<b>Estimated quantity ('000 tonnes)</b>				
Soil conditioner	1,898	1,797	1,463	591	722
Mulch	114	73	127	98	188
Topsoil / subsoil manufacture	199	152	138	198	68
Growing medium	241	184	155	459	102
Turf (top) dressing	34	29	37	94	15
Other	199	237	88	150	94
Unspecified	-	-	67	-	-
<b>Total</b>	<b>2,686</b>	<b>2,462</b>	<b>2,073</b>	<b>1,603</b>	<b>1,189</b>
Soil conditioner	71%	73%	71%	37%	60%
Mulch	4%	3%	6%	6%	16%
Topsoil / subsoil manufacture	7%	6%	7%	12%	6%
Growing medium	9%	7%	7%	29%	9%
Turf (top) dressing	1%	1%	2%	6%	1%
Other	7%	10%	4%	9%	8%
Unspecified	-	-	3%	-	-
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

\* Data for 2006/07 have been revised using a refined gross-up methodology and therefore may differ to those reported in the 2006/07 report.

**Figure 2** Compost products from source segregated feedstock manufactured in the UK, 2001/02 to 2007/08



\* Data for 2006/07 have been revised using a refined gross-up methodology and therefore may differ to those reported in the 2006/07 report.

**Table 21b** Compost and digestate products produced by sites certified or working towards certification under the PAS 100 scheme, 2007/08

<b>PAS 100 Certification</b>	<b>Estimated quantity produced ('000 tonnes)</b>	<b>% of total products</b>
Site / processes fully PAS 100 certified	977	36%
Site / processes working towards or not seeking PAS 100 certification	1,709	64%
<b>Total</b>	<b>2,686</b>	<b>100%</b>
<hr/>		
<b>Quality Protocol Certification</b>	<b>Estimated quantity produced ('000 tonnes)</b>	<b>% of total products</b>
PAS 100 Site or process(es) also fully certified under Quality Protocol	702	72%
-PAS 100 certified site or process(es) working towards certification under Quality Protocol	275	28%
<b>Total</b>	<b>977</b>	<b>100%</b>

In the 2007/08 survey, compost operators were asked to specify whether or not their products were made from feedstocks which included any food waste. Table 21c shows the quantities and the percentage of the total product made from feedstocks including food waste for each compost product from source segregated feedstock manufactured in the UK in 2007/08.

Soil conditioners accounted for the largest quantity of material containing food waste feedstocks. As most soil conditioners tend to be used in agricultural applications, this probably reflects the demand by farmers for a higher nutrient content compost (compared to green waste only derived material), and also where salt content (electrical conductivity) is less important than for containerised growing media<sup>6</sup>. Interestingly, the growing media sector still utilised over 30,000 tonnes of food waste-derived compost, suggesting that these materials still are still in demand for this high quality sector.

Turf (top) dressing contained the greatest proportion of feedstock including food waste in 2007/08 (56%), which, again, may rely on its greater nutrient content, compared with compost derived from green waste. Mulch contained the least amount of feedstock including food waste at only 4%, which is not surprising, as this is generally derived from coarser screened materials, and requires few nutrients.

<sup>6</sup> Food waste-derived composts tend to have higher salt content than green waste only derived composts.

**Table 21c** Compost products from feedstocks including food waste in the UK, 2007/08

Product	Made from feedstocks which included food waste	Estimated quantity ('000 tonnes)	% of total product
<b>Soil Conditioner</b>	<b>Yes</b>	<b>313</b>	<b>16%</b>
	No	1,563	82%
	Unspecified	22	1%
	Total	1,898	100%
<b>Mulch</b>	<b>Yes</b>	<b>5</b>	<b>4%</b>
	No	109	96%
	Unspecified	0	0%
	Total	114	100%
<b>Topsoil</b>	<b>Yes</b>	<b>14</b>	<b>7%</b>
	No	185	93%
	Unspecified	0	0%
	Total	199	100%
<b>Growing medium</b>	<b>Yes</b>	<b>37</b>	<b>15%</b>
	No	204	85%
	Unspecified	0	0%
	Total	241	100%
<b>Turf (top) dressing</b>	<b>Yes</b>	<b>19</b>	<b>56%</b>
	No	15	44%
	Unspecified	0	0%
	Total	34	100%

#### 4.3.2 *Types and quantities of different digestate products*

In the 2006/07 survey only five sites reported producing digestate from anaerobic digestion of source segregated feedstock (Table 22), however, the 2007/08 survey did not yield any returns in this category. The previous survey covering 2006/07 was the first year that the survey reported digestate products separately from aerobically-treated compost products and it could be that respondents are not yet confident with this new way of reporting product tonnages. Alternatively, it is not uncommon practice in other countries for anaerobic digestate to be post-composted in order to stabilise the material prior to land application. It is possible, therefore, that such

material was included in the 'compost' category. Given the current policy interest in anaerobic digestion, it seems likely that this category will increase substantially in future years. The most common output type for digestate products reported in 2006/07 was used as a soil conditioner (four out of the five sites produced soil conditioner) have been summarised for information.

The quantity of digestate reported in the survey from source segregated feedstock in 2006/07 was 86,700 tonnes of which 58% (50,300 tonnes) was soil conditioner and 42% (36,400 tonnes) was unspecified.

**Table 22** Summary of survey results on types and quantities of digestate products in the UK, 2006/07

Total digestate product scaled up to allow for survey non respondents	86,700 tonnes	
Results below relate to the five sites for which digestate products were reported		
Location	Northern Scotland	1 site
	Northern Ireland	2 sites
	East Midlands	2 sites
How outputs distributed	Unspecified	
Output types	Soil conditioner	4 sites
	Unspecified outputs	1 site

### 4.3.3 Product distribution of compost from source segregated waste

**Approximately half (49%) of the compost produced from source segregated feedstock in 2007/08 was sold (up 5% from 2006/07), with the majority of this fraction being sold directly to end users. About a third of the compost produced was used on the site of production and about a fifth of the compost produced was distributed with no charge.**

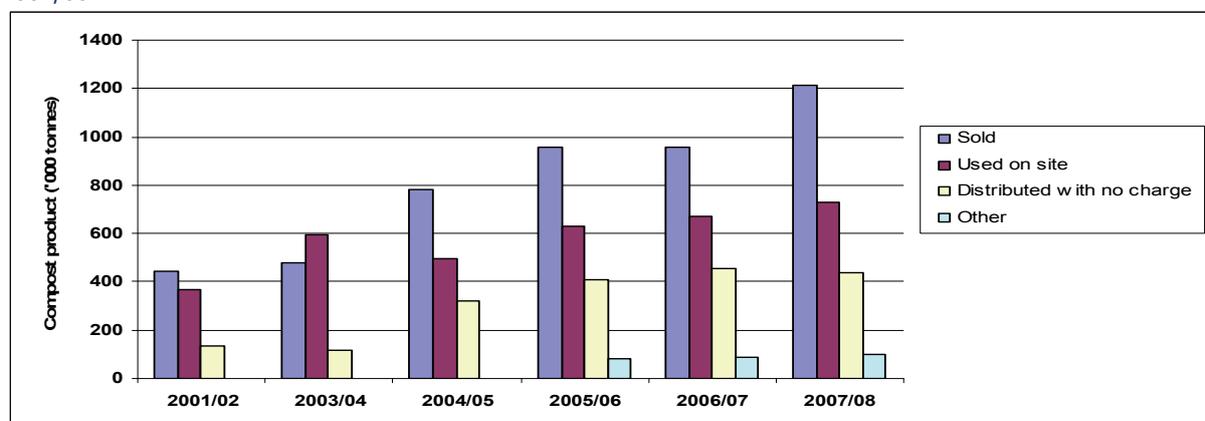
Figure 3 and Table 23a show compost product distribution in 2007/08 as compared with previous years. In order to compare the compost distribution in 2006/07 with previous years, some of the categories in Table 23 were amalgamated.

There has been a 23% increase in the overall quantity

of product sold either directly to end users, or to third parties (corresponding to a total of 229,000 tonnes) between 2006/07 and 2007/08. Sales of compost directly to end users increased by 123,000 tonnes during the same period. To put this increase into context, if it assumed that all of this was spread onto agricultural land at a rate of 30 tonnes / hectare, there would be sufficient compost to cover an area of land of 4,100 hectares, or just under 16 square miles.

These increases in product sold were accompanied by a decrease in the quantity of compost distributed with no charge of 43,000 tonnes for the same period. Collectively, these changes signal further development of the compost products market, indicating increased consumer confidence, such that end users are willing to pay for more product. These changes also seem likely to have been aided by the introduction of the Compost Quality Protocol.

**Figure 3** Compost product distribution by UK companies, 2001/02 to 2007/08



\* Data for 2006/07 have been revised using a refined gross-up methodology and therefore may differ to those reported in the 2006/07 report.

**Table 23a** Compost product distribution by UK companies, 2007/08 and 2006/07

	2007/08		2006/07	
	Estimated quantity ('000 tonnes)	% of total product	Estimated quantity ('000 tonnes)	% of total product
Sold directly to end users	955	36%	832	34%
Sold on to third parties	357	13%	251	10%
Distributed to end users or third parties (no charge)	471	18%	514	21%
Used on site	793	30%	774	31%
Other	107	4%	92	4%
Unspecified	2	<1%	0	0%
<b>Total</b>	<b>2,686</b>	<b>101%</b>	<b>2,462</b>	<b>100%</b>

\* Data for 2006/07 have been revised using a refined gross-up methodology and therefore may differ to those reported in the 2006/07 report.

Table 23b shows the quantities and the percentage of the total product made from feedstocks including food waste for each type of compost product distribution by UK companies in 2007/08. These data suggest that 237,000 tonnes of product derived from food waste

feedstocks was sold either directly to end users or onto third parties. This compares to 162,000 tonnes that were used either on-site or distributed at no charge and indicates a willingness by consumers to purchase these materials.

**Table 23b** Compost product distribution of products made from feedstocks including food waste in the UK, 2007/08

Product distribution	Made from feedstocks which included food waste	Estimated quantity ('000 tonnes)	% of total product
<b>Sold directly to end users</b>	<b>Yes</b>	<b>178</b>	<b>19%</b>
	No	767	80%
	Unspecified	10	1%
	Total	955	100%
<b>Sold onto third parties</b>	<b>Yes</b>	<b>59</b>	<b>17%</b>
	No	298	83%
	Unspecified	0	0%
	Total	357	100%
<b>Distributed (no charge)</b>	<b>Yes</b>	<b>134</b>	<b>28%</b>
	No	320	68%
	Unspecified	17	4%
	Total	471	100%
<b>Used on site</b>	<b>Yes</b>	<b>28</b>	<b>3%</b>
	No	765	97%
	Unspecified	0	0%
	Total	793	100%

#### 4.3.4 Markets for composted products made from source segregated waste

**In both 2007/08 and 2006/07, the biggest UK market for composted products from source segregated feedstock was agriculture which took 1.3 million tonnes of composted product.**

Agriculture used just under half (1.3 million tonnes or 47%) of all compost products in 2007/08 (Table 24a). Approximately 71% of the sites in the survey provided compost to this market sector. The second largest market sector was landfill restoration and daily cover which took 348,000 tonnes in 2007/08, however less

than a fifth (14%) of all sites in the survey provided compost to this market sector.

Considering the higher value markets, over a quarter of a million tonnes went into horticulture with the quantity going to amateur horticulture almost three times that going to professional horticulture. As noted previously, this may have been driven by the peat replacement targets set in the UK Biodiversity Action Plan, with composted materials being used in the technically less demanding amateur sector. Landscaping took over a quarter million tonnes corresponding to 13% of the UK market for composted

products with a quarter of all sites producing compost for this market sector. Use of compost in the sector had increased by 66,000 tonnes, indicating compost producers are continuing to supply product into this professional services sector.

The survey also illustrated that there remained demand for compost for landfill restoration and daily cover. It will be interesting to see whether this demand remains as the increasingly stringent landfill diversion targets come into force, and as landfill tax increases.

**Table 24a** Distribution of composted products in the UK by market type, 2007/08 and 2006/07

	Estimated quantity of compost product going to each market sector ('000 tonnes)		% of compost product going into each market sector		Percentage of sites servicing market sector*	
	2007/08	2006/07**	2007/08	2006/07	2007/08	2006/07
Agriculture	1,251	1,294	47%	53%	71%	65%
Horticulture - professional	70	59	3%	2%	11%	15%
Horticulture – amateur	231	210	9%	9%	18%	22%
Landscaping	354	288	13%	12%	25%	28%
Sports turf	50	63	2%	3%	5%	8%
Landfill restoration / daily cover	389	377	14%	15%	14%	16%
Energy recovery	15	10	1%	<1%	2%	1%
Forestry	1	1	<1%	<1%	<1%	<1%
Land restoration	171	149	6%	6%	7%	8%
Other	80	11	3%	<1%	4%	1%
Unspecified	74	0	3%	0%	0%	0%
<b>Total</b>	<b>2,686</b>	<b>2,462</b>	<b>100%</b>	<b>100%</b>	-	-

\* Sites may supply more than one market sector so numbers will not total 100%.

\*\* Data for 2006/07 have been revised using a refined gross-up methodology and therefore may differ to those reported in the 2006/07 report.

Table 24b shows the market type distribution of compost products from feedstocks including food waste in the UK in 2007/08. Compost products used in agriculture and amateur horticulture contained the greatest amount of feedstock including food waste in 2007/08 (231,000 tonnes and 45,000 tonnes, respectively). Compost products used in landfill

restoration / daily cover and forestry contained no feedstocks which included food waste, which may indicate that the increased processing costs in order to comply with the Animal By-Products Regulations may confer a greater value to the product, consequently precluding its use in such low-grade applications.

**Table 24b** Market type distribution of compost products from feedstocks including food waste in the UK, 2007/08

Market type	Product made from feedstocks which included food waste	Estimated quantity ('000 tonnes)	% of total product
<b>Agriculture</b>	<b>Yes</b>	<b>231</b>	<b>18%</b>
	No	1,002	80%
	Unspecified	18	2%
	Total	1,251	100%
<b>Horticulture - professional</b>	<b>Yes</b>	<b>11</b>	<b>16%</b>
	No	57	81%
	Unspecified	2	2%
	Total	70	100%
<b>Horticulture - amateur</b>	<b>Yes</b>	<b>45</b>	<b>20%</b>
	No	184	80%
	Unspecified	2	<1%
	Total	231	100%
<b>Landscaping</b>	<b>Yes</b>	<b>35</b>	<b>10%</b>
	No	316	89%
	Unspecified	3	1%
	Total	354	100%
<b>Sports turf</b>	<b>Yes</b>	<b>7</b>	<b>15%</b>
	No	41	82%
	Unspecified	2	3%
	Total	50	100%
<b>Landfill restoration / daily cover</b>	<b>Yes</b>	<b>0</b>	<b>0%</b>
	No	385	99%
	Unspecified	4	1%
	Total	389	100%
<b>Energy recovery</b>	<b>Yes</b>	<b>10</b>	<b>69%</b>
	No	5	31%
	Unspecified	0	0%
	Total	15	100%
<b>Forestry</b>	<b>Yes</b>	<b>0</b>	<b>0%</b>
	No	1	100%
	Unspecified	0	0%
	Total	1	100%
<b>Land restoration</b>	<b>Yes</b>	<b>22</b>	<b>13%</b>
	No	149	87%
	Unspecified	0	0%
	Total	171	100%

The survey also asked those supplying compost to the agriculture sector, which crops their composted products were used on. By far the most common type of crop was the arable / cereal category (Table 25a). Fewer sites supplied to grassland, and the vegetables / fruit / salad crops category. None of the sites in the survey supplied to glasshouse crops. The percentage

of sites supplying to arable / cereal crops has increased by 6% between 2006/07 and 2007/08, the percentage of sites supplying to grassland has increased by 15% and the percentage of sites supplying to vegetables / fruit / salad crops has also increased by 15%.

**Table 25a** Agricultural crops where composted products were used in the UK, 2007/08 and comparison with 2006/07

Crop	Number of sites supplying to crop type (2007/08)	% of sites 2007/08*	Number of sites supplying to crop type (2006/07)	% of sites 2006/07*
Arable / cereal	110	86%	114	80%
Grassland	42	33%	25	18%
Vegetables / fruit / salad crops	35	27%	17	12%
Other	2	2%	1	1%
Glasshouse protected crops	0	0%	0	0%
<b>Total</b>	<b>128</b>	<b>-</b>	<b>142</b>	<b>-</b>

\* Sites may supply more than one crop type so numbers will not total 100%.

Table 25b shows the compost products from feedstocks including food waste used on agricultural crops in the UK in 2007/08. Compost products used on arable / cereal and combinable crops contained the greatest amount of feedstock including food waste in 2007/08 (25%). Compost products used on

vegetables, fruit and salad crops contained the least amount of feedstock including food waste (only 1%), which probably reflects the increased technical demands of this sector (compared with arable crops) and suggest further work is required in to build confidence and demonstrate efficacy.

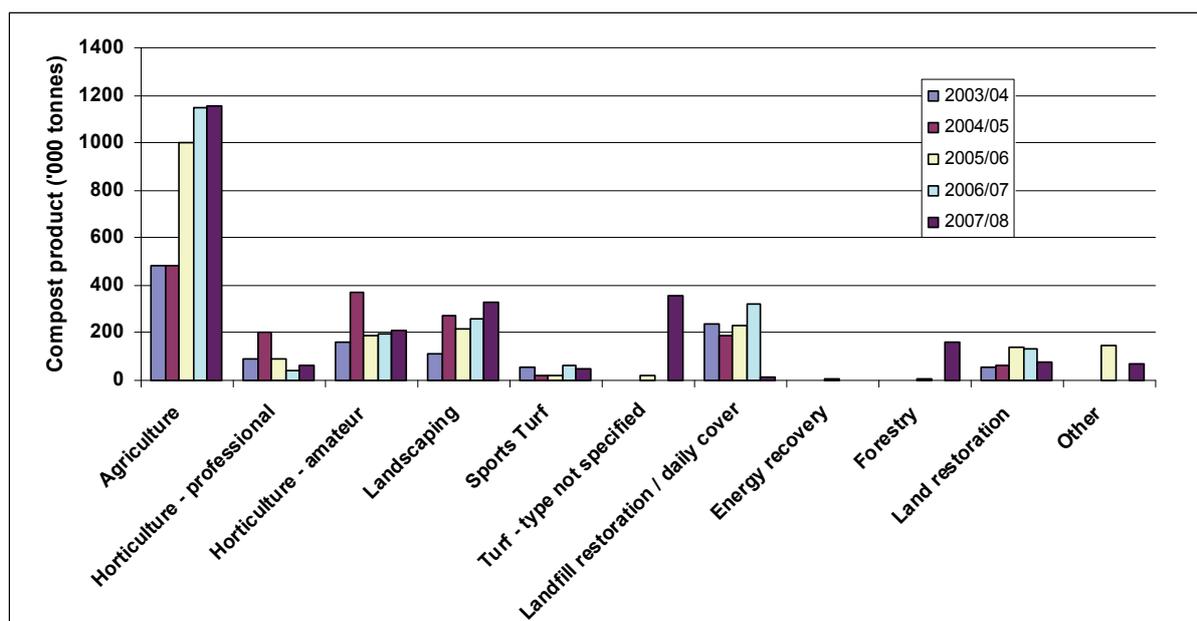
**Table 25b** Compost products from feedstocks including food waste used on agricultural crops in the UK, 2007/08

Agricultural crop	Product made from feedstocks which included food waste	Estimated quantity ('000 tonnes)	% of total product
<b>Arable, cereals, combinable</b>	<b>Yes</b>	<b>259</b>	<b>25%</b>
	No	755	74%
	Unspecified	11	1%
	<b>Total</b>	<b>1025</b>	<b>100%</b>
<b>Vegetables, fruit, salad</b>	<b>Yes</b>	<b>1</b>	<b>1%</b>
	No	73	99%
	Unspecified	0	0%
	<b>Total</b>	<b>74</b>	<b>100%</b>
<b>Grassland</b>	<b>Yes</b>	<b>5</b>	<b>4%</b>
	No	127	94%
	Unspecified	3	2%
	<b>Total</b>	<b>135</b>	<b>100%</b>

Figure 4 compares the compost product markets for 2007/08 with the previous four years. Between 2006/07 and 2007/08 there was a 6% decrease in the quantity of compost used in agriculture, which may have been due to the moratorium placed on compost use in Scotland in 2007. There have been small increases in the quantities of compost going into professional and amateur horticulture, landscaping, landfill restoration, land restoration and energy recovery. Looking back strategically over the five years summarised in Figure 4, it is evident that agriculture has been the single biggest growth market for the end

product. In absolute terms, quantities used in agriculture have more than doubled since 2003 – 2005 and this broadly equates to the whole of the increase in the overall market over the past five years. This may, in part, be due to increased confidence of farmers in the use of composted products, stemming from improved relationships between farmers and composters, an increase in the quantity of information available and feedback from demonstration projects. Notwithstanding, these data illustrate the importance of this sector to the composting industry.

**Figure 4** Markets for composted products in the UK, 2003/04 to 2007/08



\* Data for 2006/07 have been revised using a refined gross-up methodology and therefore may differ to those reported in the 2006/07 report.

#### 4.3.5 Market sectors offering potential for growth for compost products in the next year

The survey asked compost companies to specify which market sectors they saw offering the greatest potential for growth for their organisation in the year ahead (Table 26). There are marked differences in the results for 2007/08 compared to those from 2006/07. Whilst there has been a 5% increase in sites composting source segregated feedstock that thought the agriculture sector offered the greatest potential for growth; there have been fairly substantial decreases in the number of sites stating any of the other market

sectors. The next most commonly mentioned market sector was landscaping which was cited by only 18% of compost companies in 2007/08 compared to over a third of compost companies in 2006/07.

It is interesting to note that there was a decrease in the number of respondents who considered the landfill restoration / daily cover offered potential for growth, possibly due to the increase in landfill tax and diversion targets noted previously.

**Table 26** Market sectors viewed by composting companies as offering greatest potential for growth in the UK

Market sector	Number of sites considering market sector offers potential for growth for them 2007/08	% of sites	Number of sites considering market sector offers potential for growth for them 2006/07	% of sites
Agriculture	126	62%	82	57%
Landscaping	36	18%	51	37%
Land restoration	28	14%	34	29%
Horticulture – professional	27	13%	35	18%
Horticulture – amateur	31	15%	36	17%
Sports turf	14	7%	19	15%
Landfill restoration / daily cover	28	6%	20	11%
Energy recovery	11	5%	9	7%
Forestry	2	1%	3	3%
Other	9	4%	2	5%
<b>Total</b>	<b>204</b>		<b>146</b>	-

#### 4.4 Mixed waste biological treatment

The survey also asked about mechanical biological treatment (MBT) of mixed waste. MBT of mixed waste tends to produce a lower value output that is harder to market than compost product from source segregated feedstock, and remains a waste, and hence, subject to regulatory control. The results are shown in Tables 27 and 28. There were 15 site responses to the survey from companies which operated MBT or biological treatment of mixed waste. This number is similar to the 13 sites operating MBT or biological treatment of mixed waste in 2006/07.

Estimates of the quantities of mixed waste treated are shown in Table 27. The estimated quantity of mixed waste processed in the UK in 2007/08, based on survey responses received (n.b. not scaled up to allow for survey non respondents as a reliable basis for this

has yet to be determined) was approximately 583,500 tonnes. The biodegradable component of the waste was approximately 344,500 tonnes.

The recorded quantity of mixed waste inputs to biological treatment in the UK has increased significantly since 2006/07; however the biodegradable fraction of mixed waste in 2007/08 shows a substantial decrease since 2006/07. Approximately 85% of the waste undergoing MBT or biological treatment of mixed waste in 2007/08 was municipal waste and approximately 15% was non-municipal waste, compared to 56% that was municipal and 44% that was non municipal in 2006/07. The majority of outputs were either used on the site of production or other sites of the producer, disposed of directly to landfill or distributed with no charge.

**Table 27** Quantity of mixed waste inputs to biological treatment in the UK, 2007/08 and 2006/07

	<b>Estimated quantity 2007/08 (tonnes)</b>	<b>Estimated quantity 2006/07 (tonnes)</b>
Input municipal mixed waste	494,244	77,510
Input non municipal mixed waste	89,281	60,763
<b>Total input mixed waste</b>	<b>583,525</b>	<b>138,273</b>
Biodegradable fraction of municipal waste	316,330	66,895
Biodegradable fraction of non municipal waste	28,138*	55,916
<b>Total biodegradable fraction of the mixed waste</b>	<b>344,468</b>	<b>122,811</b>

*\*Two sites reported the biodegradable fractions of their non-municipal waste (nearly 38,000 tonnes) were 5% only and also another two sites did not provide biodegradable fraction for their non-municipal waste which accounts for approximately 6,500 tonnes*

**Table 28** Summary of survey results on the mechanical and biological treatment of mixed wastes in the UK, 2007/08

Total mixed waste processed as reported by survey respondents		583,525 tonnes
Results below relate to the <b>15</b> sites for which MBT data were reported only*		
<b>Technique used by sites</b>		<b>% of total sites</b>
<b>Technique</b>	Aerobic	93%
	Anaerobic	7%
<b>How outputs distributed</b> (The majority of outputs were either used on the site of production or other sites of the producer, disposed of directly to landfill or distributed with no charge.)		
		<b>% of total tonnes</b>
<b>Output types</b>	Waste for direct disposal to landfill	30%
	Soil conditioner	13%
	Stabilized biowaste	12%
	Solid recovered fuel	10%
	Mulch	1%
	Topsoil / subsoil manufacture	1%
	Unspecified outputs	33%
<b>End uses</b>	Land restoration	46%
	Direct disposal to landfill	11%
	Agriculture	8%
	Landfill restoration / daily cover	5%
	Energy (solid recovered fuel)	2%
	Landscaping	1%
	Other	27%
	Unspecified	<1%

\* In South Scotland one company sent in a single site record in 2007/08 which covered 60 sites. This has been included in the results as 1 site only.

#### 4.5 Additional processing capacity

The survey asked about whether composting and biological treatment companies had any unused capacity in 2007/08, and if that was the case, how much additional waste could have been processed in 2007/08 if this capacity has been used. Capacity obviously varies substantially during the course of the seasonal year, and the question asked here dealt with this issue by requesting operators simply to state how much additional waste they could have processed over the year as a whole, thus leaving it to producers to determine the practical extent of their unused capacity. The survey also asked about whether there were definite plans (i.e. with any required permits and necessary investment already in place) to expand the processing capacity of current sites during the next five years. Quantities of additional source segregated and mixed waste capacity that would be generated by such expansion were requested and companies were asked to provide details of any new composting / biological treatment sites they would be opening after the 31<sup>st</sup> March 2008.

The questions used in the 2007/08 survey to determine unused and additional new capacity are the same as those used in 2006/07 and therefore enables easy comparison between the two years.

The results are shown in Tables 29, 30, 31 and 32 below. Just over a fifth (21%) of composting and biological treatment companies had definite plans for opening new composting / biological treatment sites after 31<sup>st</sup> March 2008 (Table 29). Half (56%) all the existing composting / biological treatment sites surveyed claimed to have not yet reached full capacity (Table 30) and as many as 70 sites (34%) surveyed said that they had plans to expand the processing capacity of their existing sites during the five year period from April 2008 to March 2013 (Table 31). When asked if these plans were definite with required permits and necessary investment already in place only 40 of these 70 sites (equating to 15% of all sites) said they had definite plans (Table 32).

**Table 29** Nature of plans for opening new composting / biological treatment sites in the UK after 31<sup>st</sup> March 2008

	Number of composting companies 2007/08	% of composting companies 2007/08
Yes - definite plans	22	21%
No - no plans	83	77%
Unspecified	2	2%
Total	107	100%

**Table 30** Status of existing processing capacity at existing sites (both source segregated and mixed wastes) in the UK, 2007/08 and 2006/07

	Number of composting / biological treatment sites 2007/08	% of composting / biological treatment sites 2007/08	% of composting / biological treatment sites 2006/07
Reached full capacity	77	38%	31%
Not reached full capacity	115	56%	62%
Unspecified	12	6%	7%
Total	204	100%	100%

**Table 31** Nature of plans for expanding processing capacity at existing sites (both source segregated and mixed wastes) in the UK, April 2008 to March 2013

	Number of composting / biological treatment sites 2007/08	% of composting / biological treatment sites 2007/08
Yes – plans for expansion	70	34%
No – no plans for expansion	120	59%
Unspecified	14	7%
Total	204	100%

**Table 32** Status of plans for expanding processing capacity at existing sites (both source segregated and mixed wastes) in the UK, April 2008 to March 2013

	Number of composting / biological treatment sites 2007/08	% of composting / biological treatment sites with plans for expansion 2007/08
Yes – definite plans	40	57%
No – not definite yet	30	43%
Total	70	100%

The results relating to the reported amount of additional processing capacity in 2007/08, are shown in Table 33 and are compared with 2006/07 figures. The unused source segregated capacity in 2007/08 is estimated to be about 1.1 million tonnes (289,000 tonnes less than in 2006/07) and the unused capacity for the biological treatment of mixed waste in 2007/08 is estimated to be about 140,000 tonnes (15,000 tonnes less than in 2006/07). Note that this is the producers' own assessment of their current

annualised capacity to handle more waste. An additional 570,000 tonnes of source segregated capacity is also estimated to be generated by companies in future across their existing sites over the next five years as a result of expansion, with a much smaller additional capacity for biological treatment. As the question is asked of companies and is not site specific, we cannot determine which site size bands are most likely to expand nor therefore, their individual planned future capacity.

The figures for this 'currently unused' and 'additional new' capacity should be treated with a degree of caution as there were a small number of inconsistencies with the information provided by respondents to this section of the survey. These included potential double counting of unused and new capacity as well as specifying waste management licence capacity limits rather than actual site capacity limits. Every effort was made to clarify the unused and new capacity information provided, however the results should still be interpreted with care.

In summary therefore, and notwithstanding the caveats outlined above, we estimate that the total annual capacity of the industry as 5.8 million tonnes (4.6 million of which is currently used and approximately 1.2 million additional unused capacity – a current available annualised capacity utilisation rate of 79%). Anticipated annual available capacity is estimated to expand to 6.4 million tonnes in the coming five years. This is broadly in line with estimated diversion of municipal garden and food waste required by 2012/13 to meet the UK's landfill diversion target for that year, but suggests there may be a shortfall for industrial and commercial wastes.

**Table 33** Unused composting and biological treatment capacity in the UK in 2007/08 and future expansion to composting and biological treatment capacities in the UK, compared with 2006/07

	<b>Additional capacity 2007/08 (000 tonnes)</b>	<b>Additional capacity 2006/07 (000 tonnes)</b>
Unused source segregated capacity	1,068	1,357
Unused mixed wastes capacity	137	152
<b>Total unused capacity</b>	<b>1,205</b>	<b>1,509</b>
Additional source segregated capacity within five years	570	579
Additional mixed wastes capacity within five years	40	30
<b>Total additional capacity</b>	<b>610</b>	<b>609</b>
<b>Total unused and additional capacity</b>	<b>1,815</b>	<b>2,118</b>

## 5.0 Summary and conclusions

### 5.1 Organic waste recycling and treatment

The results from this survey suggest that a total of around 4.5 million tonnes of separately collected organic wastes were recycled in the UK during 2007/08 through a biological treatment process, with composting comprising the principal method. Compared with surveys conducted in previous years, these data follow a long term trend of annual increases: up 9% from the 2006/07 data (4.1 million tonnes), and with just under a five-fold increase since 1998. Of the 4.5 million tonnes, 88% comprised municipal wastes, with just under half (45%) of this municipal waste collected from Civic Amenity (CA) sites, and a further 47% from kerbside collections. Similar to 2006/07, the non municipal waste component was 538,000 tonnes (12% of the total) of which just under a third (29%) was from landscaping / grounds maintenance, and over a third (37%) from food waste industry wastes.

This growth is probably accounted for by the recycling targets set for local authorities and their landfill diversion targets for biodegradable municipal wastes introduced under the Waste and Emissions Trading Act (2003). As only a relatively small increase in non-municipal waste (47,000 tonnes) was observed, this suggests that commercial and industrial producers of organic wastes were either not placed under similar recycling pressures as the public sector (hence they utilised alternative recycling or disposal routes), or that they were not captured by this survey. The rate of landfill tax during the survey period 2007/08 was set at £24 a tonne. It will be interesting to observe how the ratio of non-municipal to municipal waste recycled changes in the future after the introduction of the £8-a-year landfill tax escalator in 2008/09.

The survey suggested that the quantity of mixed waste undergoing biological treatment was much lower than for source segregated composting. Approximately 583,500 tonnes of mixed waste was processed and approximately 344,500 tonnes of this was biodegradable waste. Again, this is a sector that is anticipated to increase in the future as the landfill diversion targets become progressively higher, and as the costs of landfill disposal increase.

### 5.2 Industry market analysis and process composition

The composting and biological treatment industry has an estimated annual turnover of £166 million (up 44% on 2006/07, although this appears to be largely a result of improvements to the method of calculation used in 2007/08), with a workforce of around 1,350 full time equivalent employees (similar to 2006/07 and up 13% on 2005/06). An estimated 75% of total

industry turnover is attributable to the 25% of the largest firms with individual company turnovers exceeding £1 million (upper quartile).

The size distribution of composting sites showed that there continues to be large numbers of medium sized sites, with 58% of sites (118 out of the 204 responding sites) processing between 10,000 and 50,000 tonnes of input feedstocks in 2007/08. The proportion of total waste composted is also highest for the medium sized sites with 74% of the total quantity processed being through the mid range sites taking 10,000 to 50,000 tonnes. Only 3% of the total waste is processed through the small sites taking less than 5,000 tonnes per annum. Altogether 91% of waste is composted by the 70% largest sites taking above 10,000 tonnes a year. These data suggest that the organics recycling sector comprises a diverse range of company sizes, and hence business models, with the distribution of small, medium and large organisations remaining relatively constant between 2006/07 and 2007/08. This implies that economies of scale have not played a significant role to date, although analysis of the 'employee' to 'waste' ratios indicate that composting efficiency (tonnes composted per employee; tpe) increased to 3,330 tpe in 2007/08 from 2,789 tpe in 2006/07.

The most common main business activity amongst composting facility operators responding to the survey was compost producer / biological treatment operator which applied to 46% of operators, similar to 2006/07. Companies in this sector composted 51% of the total waste input for 2007/08. The next most common main business activity applying to 19% of composting operators was solid waste treatment / waste disposal, followed by 16% of operators whose main business activity was agricultural activities. Solid waste treatment / disposal operators processed 35% of the total waste input, however, only 6% of the total waste input was processed through businesses defining their principal activity as agricultural. The distribution of composting companies over different main business activities are similar to those in 2007/08 indicating that there has been no major change in the balance of types of composting companies over this time period.

Approximately 53% of all sites were found to be dedicated composting sites, processing 67% of the total waste composted. Approximately 25% of sites were classified by their operators as farm sites and 11% were classified as landfill sites. However, only 10% of total waste composted was accounted for by farm sites, compared to 12% of waste composted being composted by landfill sites.

The majority of sites (86%) solely composted waste that was imported from outside the composting site and a further 10% composted both wastes that were imported from outside the site and waste that was produced on the site. Only 3% of sites composted solely waste that was produced on the site. This still suggests that the vast majority of sites have been established to treat *ex-situ* wastes, rather than being established as on-site treatment facilities.

Open air mechanically turned windrow was the most common composting method used in 2007/08 with an estimated 86% of all source segregated waste composting carried out using this method. A further 12% of composting was carried out using in-vessel composting. The 3,472,000 tonnes processed at in open air turned windrow systems correspond to the estimated 3,413,000 tonnes of non-ABPR green waste collected. This indicates that the organics recycling sector remains dominated by relatively simple windrow systems processing green waste. However, there was an increase of 291,000 tonnes of material composted in-vessel (IVC) between 2006/07 and 2007/08 to give a total of 732,000 tonnes. This is greater than the quantities of food waste collected (either separately or mixed with green waste) from all sources (654,000 tonnes), suggesting that IVC is being used to treat some non-food waste sources.

### 5.3 Future capacity increases

It is estimated that in 2007/08 there was up to 1.1 million tonnes of unused source segregated waste processing capacity and approximately 137,000 tonnes of unused mixed waste processing capacity available in the UK. This is in addition to the 4.5 million tonnes of source segregated and 583,500 tonnes of mixed waste that was actually processed in 2007/08. Current capacity in the UK is estimated at around 5.7 million tonnes, of which current composting accounts for 79% of annualised capacity.

Many composters also indicated that they had definite plans to expand their composting capacities at existing and / or new sites. The vast majority of this expansion would be for source segregated waste rather than mixed waste processing with an estimated 600,000 tonnes of new capacity for source segregated waste inputs, and 40,000 tonnes of mixed waste processing capacity due to come on line over the next five years. Total UK capacity is therefore anticipated to expand to some 6.3 million tonnes over this period. Thus, the survey results indicate that a significant amount of additional processing capacity is planned to become operational in the UK in the near future, although these figures should be treated with some caution, as described in Section 4.5. Notwithstanding, this is broadly in line with the estimated diversion of municipal garden and food waste required by 2012/13 to meet the UK's landfill diversion target for that year, but suggests there may be a shortfall for industrial and commercial wastes.

### 5.4 Compost quality

The Compost Quality Protocol (CQP) was introduced in England and Wales in mid-March 2007 and sets criteria for compost to be classified as a product and not a waste; hence the compost becomes free from waste regulatory control. This survey (2007/08), therefore, was the first to survey compost producers with this new protocol in place.

The returns to this survey indicated that a total of 43 sites achieved certification during 2007/08, which represents 16% of the total number of sites covered by this survey, or 38% of those sites who indicated they were seeking certification. A further 48% of those seeking certification were working towards certification. The survey appeared to overestimate the actual number of certified sites, as AFOR's records indicated that as of 31 March 2008 only 8 sites were fully certified while 86 were working towards certification (94 in total). This discrepancy is most likely to reflect respondent recall about the precise time of certification. The overall message from the survey, however, remains that the industry is making rapid and continuing headway towards certification of the specified standards.

### 5.5 Markets for compost

The quantity of compost produced from source segregated waste in the UK in 2007/08 was approximately 2.7 million tonnes, an increase of 9% from 2006/07 and more than double the quantity produced five years ago. The main compost product was soil conditioner which accounted for 1.9 million tonnes or 71% of the total products produced. The proportion of soil conditioner was very similar to the 73% estimated by the 2006/07 survey and identical to the survey in 2005/06 which also estimated a proportion of 71%. In terms of absolute quantities, the overall quantity of soil conditioner produced in 2007/08 was more than twice that produced in 2003/04.

The 2007/08 survey asked respondents for the first time whether they composted food waste and how the resultant product was used (i.e. to which product sectors it was marketed). Soil conditioners accounted for the largest quantity of material containing food waste feedstocks. As most soil conditioners tend to be used in agricultural applications, this probably reflects the demand by farmers for a higher nutrient content compost (compared to green waste only derived material), and also where salt content (electrical conductivity) is less important than for containerised growing media. The survey suggested that the growing media sector still utilised over 30,000 tonnes of food waste-derived compost, suggesting that these materials still are still in demand for this high quality sector.

Turf (top) dressing contained the greatest proportion of feedstock including food waste in 2007/08 (56%), which may rely on its greater nutrient content, compared with compost derived from green waste. Mulch contained the least amount of feedstock including food waste at only 4%, which is not surprising, as this is generally derived from coarser screened materials, and requires few nutrients.

The survey indicated that 237,000 tonnes of product derived from food waste feedstocks was sold, compared to 162,000 tonnes that were used either on-site, or distributed at no charge, indicating a willingness by consumers to purchase these materials.

Overall, there was an increase of 9% (224,000 tonnes) in the size of the compost market between 2006/07 and 2007/08. Approximately half (49%) of all composted products produced in the UK in 2007/08 from source segregated feedstock were sold (up 5% from 2006/07) with a further third used on the site of production and a further fifth distributed with no charge. There has been very little change in the proportion of compost product sold over the last five years. However, there was a 21% increase in the overall quantity of product sold either directly to end users, or to third parties (corresponding to a total of 229,000 tonnes) between 2006/07 and 2007/08.

These increases in product sold were accompanied by a decrease in the quantity of compost distributed with no charge of 43,000 tonnes for the same period. The proportion of compost product distributed with no charge decreased by 3% between 2006/07 and 2007/08 while the proportion used on site has remained nearly the same. Collectively, these changes signal further development of the compost products market, indicating increased consumer confidence, such that end users are willing to pay for more product. These changes also seem likely to have been aided by the introduction of the Compost Quality Protocol, and may well change in the future once more composts become certified under the CQP.

Just under half (47%, or 1.3 million tonnes) of all products generated from source segregated composting went to agriculture in 2007/08. The next most common market sectors were landfill restoration / daily cover (14%) and landscaping (13%). Agricultural end-use has more than doubled over the past five years and the growth in this outlet equates to the whole of the growth in end use markets in the past five years. Of those sites supplying compost to agriculture, the most common crop type for compost usage was arable / cereal (86%). Notably, no compost was supplied to glasshouse protected crops, which may indicate unwillingness by growers to use compost, or a lack of end use specifications for these technically demanding, high value crops. Further research in this area may be needed to identify opportunities and constraints for this sector.

Composting companies operating source segregated composting sites considered the agriculture sector to offer the greatest potential for growth for their business, (62% of respondents, up 5% since 2006/07). Approximately 18% of respondents felt that the landscaping sector also offered some potential, together with amateur horticultural (15%) and professional horticulture (13%) and land restoration (14%). As agriculture was the dominant market sector in both 2006/07 and 2007/08, it is not unexpected that companies see potential for growth in this sector. In the view of recent significant rises in artificial fertilizers the benefits of compost are being realised by the farming community and this is not likely to change in the near future.

The data from the survey indicate that compost markets have generally grown compared with previous years, and that markets for food waste-derived composts exist. As more compost is produced under the CQP it will be interesting to observe whether demand for product (non-waste) in certain sectors increases, especially if the waste regulators begin to enforce the controls on waste compost more rigorously than they have to date.

In contrast with source segregated waste composting, the vast majority of the output from mixed waste feedstock was used on the site of production or other sites of the producer, disposed of directly to landfill, or distributed with no charge.. The output from mixed waste composting tends to be of lower value and remain subject to regulatory control. The market sector distribution was also very different from that of compost from source segregated feedstock with 46% of outputs from mixed waste going to land restoration, a further 16% going to landfill / restoration / daily cover, and only 8% going towards agriculture, a situation that may change in the future

## 5.6 Conclusion

Overall, the 2007/08 survey shows that UK composting and biological treatment industry is continuing to grow, with a slightly steeper growth in quantity throughput than was evident in 2006/07. The survey quality again meant that an in depth picture of the UK composting industry is available for 2007/08 covering its financial size, employment, feedstock used, and products produced including product types, markets the products are used in and how they are distributed. The survey has built on the results of the 2006/07 survey and has shown some important trends such as the continued overall expansion of the sector. It will prove to be a valuable addition to the benchmark set by the 2006/07 survey for future trends in the UK composting and biological treatment industry.

## 6.0 Appendices

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# Appendix 1

## Survey form and covering letter

6 October 2008

Dear

### **ASSOCIATION FOR ORGANICS RECYCLING ANNUAL SURVEY 2007/08**

The **Association for Organics Recycling** (AFOR), formerly The Composting Association, is working in association with the **Waste & Resources Action Programme** (WRAP) to conduct its annual survey of the UK Composting and Biological Waste Treatment Industry. WRAP is a not-for-profit company supported by government funding, with a remit to create stable and efficient markets for recycled materials and products. The survey is being administered by **M·E·L Research** on behalf of AFOR and WRAP.

We would be very grateful if you, or the most appropriate person in your company or organisation, could take the time to complete the enclosed questionnaire and return it by **Friday 14<sup>th</sup> November 2008**.

The information you provide is valuable and will help us to better understand the composting and biological treatment industry. The results of the survey are also **important to you as compost producers and organics recyclers**. They will enable you to identify industry trends in operating methods and processing technologies, plan for diversification and treatment of new feedstocks, prepare business plans for investment, identify product development and marketing opportunities and prepare for impacts from competing products and services.

**All responses will be treated in strict confidence** and will not be accessible to anyone outside of the project team. All published results will be in aggregate form and **individual responses will not be identified**. The report on last year's survey will be available soon via the Association for Organics Recycling website at [www.organics-recycling.org.uk](http://www.organics-recycling.org.uk).

**All completed responses received by the survey closing date will be entered into a draw to win an iPod Nano<sup>1</sup>.**

If you have any questions about this survey please ring the Composting Survey Helpline at M·E·L Research on 0121 604 4664 or e-mail [composting.survey@m-e-l.co.uk](mailto:composting.survey@m-e-l.co.uk).

Thank you for your support and we look forward to receiving your views about the composting industry.

Yours sincerely

**Jeremy Jacobs**  
**Chief Executive, Association for Organics Recycling**

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<sup>1</sup> iPod is a registered trademark of Apple Computer, Inc. iPod is not a promotional partner or sponsor of this survey.

## The Association for Organics Recycling Annual Survey of:

# The UK Composting and Biological Treatment Industry 2007/08

**The Association for Organics Recycling (previously known as The Composting Association)** is working in association with the **Waste & Resources Action Programme (WRAP)** to conduct its annual survey of the UK Composting and Biological Waste Treatment Industry. The survey is being administered by **M·E·L Research** on behalf of the Association for Organics Recycling and WRAP.

It is important that you take part because the results will be of interest to all **compost producers and other organics recyclers**. The results will help you:

- Identify industry trends in operating methods and processing technologies
- Plan for diversification and treatment of new feedstocks in the future
- Prepare business plans for investment, based on sound market knowledge
- Formulate long-term strategies based on detailed knowledge of the scale and rate of growth of the sector
- Identify product development and marketing opportunities
- Prepare for impacts from competing products and services

**The survey covers the period 1 April 2007 to 31 March 2008.**

*All responses will be treated in strict confidence and will not be accessible to anyone outside of the project team. All published results will be in aggregate form and individual responses will not be identified.*

### Need help filling in the survey form?

If you have any questions about the survey or if you require help filling in the survey form please:

- Ring the **Composting Survey Helpline** at M·E·L Research on **0121 604 4664** and speak to Rebecca Smith or Ian Stone; or
- E-mail [composting.survey@m-e-l.co.uk](mailto:composting.survey@m-e-l.co.uk) with your query.

### **SURVEY CLOSING DATE: Friday 14th November 2008**

Please return the completed survey form to M·E·L Research by:

**Fax to:** 0121 604 6776

**E-mail to:** [composting.survey@m-e-l.co.uk](mailto:composting.survey@m-e-l.co.uk)

**Freepost to:** Composting Survey, M·E·L Research Ltd, FREEPOST, Birmingham, B7 4BR

**Thank you for supporting this survey.**



Material change for  
a better environment

## Section A – Contact details

Name ..... Telephone .....

E-mail .....

Company Name ..... Company Postcode .....

## Section B – Company information

B1. What is the main business activity of your company? *(Please select one option only)*

- |  |  |
|--|--|
| <input type="checkbox"/> Compost producer / biological treatment | <input type="checkbox"/> Horticultural / landscaping activities    |
| <input type="checkbox"/> Anaerobic digestion                     | <input type="checkbox"/> Community group / not-for-profit business |
| <input type="checkbox"/> Water treatment                         | <input type="checkbox"/> Local authority                           |
| <input type="checkbox"/> Solid waste treatment / disposal        | <input type="checkbox"/> Other – please specify                    |
| <input type="checkbox"/> Equipment / plant supplier / hire       | .....  |
| <input type="checkbox"/> Agricultural activities                 |  |

B2. What was the turnover of the composting / biological treatment aspects of your business (including production, distribution and sales) in 2007/08? *(Please select one option only)*

- |  |   |
|--|---|
| <input type="checkbox"/> Less than £10,000     | <input type="checkbox"/> £1 million - £3 million                |
| <input type="checkbox"/> £10,000 - £50,000     | <input type="checkbox"/> £3 million - £5 million                |
| <input type="checkbox"/> £50,000 - £100,000    | <input type="checkbox"/> £5 million - £8 million                |
| <input type="checkbox"/> £100,000 - £500,000   | <input type="checkbox"/> £8 million - £10 million               |
| <input type="checkbox"/> £500,000 - £1 million | <input type="checkbox"/> More than £10 million – please specify |
|  | .....   |

B3. How many full time equivalent staff were engaged in the composting / biological treatment aspects of your business (including production, distribution and sales) in 2007/08? *(Please select one option only)*

- |                                      |                                  |                                       |
|--------------------------------------|----------------------------------|---------------------------------------|
| <input type="checkbox"/> Less than 1 | <input type="checkbox"/> 6 - 10  | <input type="checkbox"/> 21 - 50      |
| <input type="checkbox"/> 1 - 5       | <input type="checkbox"/> 11 - 20 | <input type="checkbox"/> More than 50 |

## Section C – Site information

C1. How many composting / biological treatment sites did your company operate in the UK in 2007/08?

..... site(s)

C2. Have you opened, or do you have definite plans to open, any new composting / biological treatment sites after 31 March 2008? *(Please include only those sites for which the necessary investment and required permits are already in place)*

- No
- Yes – please specify site names and location

.....

.....

If you operated more than one composting / biological treatment site please fill in Sections C to I for each site that was operating in 2007/08.

Additional copies of the survey form can be obtained:

- by photocopying, reprinting or electronically copying this form
- from The Association for Organics Recycling website [www.organics-recycling.org.uk](http://www.organics-recycling.org.uk)
- from M·E·L Research (contact details on front of this survey form)

C3. If you operated more than one site please indicate which of your site(s) this specific survey form relates to.

Site ..... of ..... (e.g. Site 1 of 3)

Operating site name .....

Operating site  
postcode or ..... County or local council area  
nearest town/village ..... where site located .....

C4. In 2007/08 was this site operating under a waste management license or permit? *(Please select one option only)*

- Yes – site was licensed / permitted  No – site was exempt

C5. Which of the following best describes the nature of this site? *(Please select one option only)*

- Dedicated composting / biological treatment site  Materials recycling facility  Community based project
- Civic amenity site  Farm  Other – please specify
- Landfill site  Horticultural / landscaping activities .....

C6. In 2007/08 was the composting feedstock for this site: *(Please select one option only)*

- Produced on site?  Brought in from outside site?  Both?

C7. Is any part of this site approved by the State Veterinary Service (now Animal Health) under the Animal By-Products Regulations? *(Please select one option only)*

- Yes – full approval  Under discussion
- In verification  No – not under consideration

C8. Was this site or any of the processes on this site PAS 100 certified or working towards certification under the PAS 100 scheme in 2007/08? *(Please select one option only)*

- Yes – site or process(es) fully PAS 100 certified – *Please go to Question C9*  Yes – site or process(es) working towards PAS 100 certification – *Please go to Question C9*  No – *Please go to Section D*

C9. Was this site or any of the processes on this site certified or working towards certification under the Quality Protocol in 2007/08? *(Please select one option only; this question does not apply to sites in Scotland)*

- Yes – site or process(es) fully certified under Quality Protocol  Yes – site or process(es) working towards certification under Quality Protocol  No – *Please go to Section D*

## Section D – Source segregated waste treatment processes

*\*Source segregated waste – is waste in which organic materials are kept separate from non-organic materials during collection\**

D1. Did you compost or digest source segregated waste at this site during 2007/08? (Excluding mixed wastes treatment which are covered in Section E)

- Yes – Please complete the rest of Section D                       No – Please go to Section E

D2. What was the total input of source segregated waste to composting and/or digestion processes at this site in 2007/08? (Excluding mixed wastes treatment which are covered in Section E)

..... tonnes

D3. In the table below, please provide an approximate breakdown of the total input of source segregated waste in 2007/08. (Excluding mixed wastes treatment which are covered in Section E)

<b>Waste input</b>	<b>Tonnes of source segregated waste input</b>
<b>Municipal waste inputs</b> (i.e. household waste and any other waste collected by or on behalf of local authorities)	
Garden waste from civic amenity/bring sites	tonnes
Garden waste only from kerbside collection	tonnes
Garden and food waste from kerbside collection	tonnes
Food waste only from kerbside collection	tonnes
Council parks / gardens waste and green waste from educational institutes	tonnes
Council-collected food waste from retailers / catering establishments	tonnes
Other municipal waste – please specify .....	tonnes
<b>Non-municipal waste inputs</b> (i.e. commercial / trade / industrial wastes not collected by or on behalf of local authorities)	
Landscape / grounds maintenance	tonnes
Forestry / timber / bark / by-products	tonnes
Food waste from retailers / catering establishments	tonnes
Food waste from other commercial establishments	tonnes
Food waste from industrial establishments	tonnes
Other non municipal waste – please specify .....	tonnes
<b>TOTAL</b>	= Question D2

D4. In the table below, please provide an approximate breakdown of the initial treatment processes that were used to treat source segregated waste at this site in 2007/08. (Excluding mixed wastes treatment which are covered in Section E)

<b>Initial treatment process</b>	<b>Tonnes of source segregated waste input</b>
<b>Open air mechanically turned windrow</b> (i.e. composting outside in long rows (windrows) that are turned mechanically)	tonnes
<b>Covered mechanically turned windrow</b> (i.e. composting undercover or inside a building in long rows (windrows) that are turned mechanically)	tonnes
<b>Static pile with aeration</b> (i.e. composting in long rows (windrows) utilising forced aeration, usually with minimal turning)	tonnes
<b>Table composting</b> (i.e. composting outside using a trapezoidal arrangement, that is turned by a windrow turner)	tonnes
<b>In-vessel composting</b> (the production of compost, featuring the enclosure of the active composting stage, providing a high degree of control and meeting Animal By-Products regulations)	tonnes
<b>Anaerobic digestion</b> (a series of enclosed biological processes in which microorganisms break down biodegradable material in the absence of oxygen)	tonnes
<b>Thermophilic aerobic digestion</b> (a series of enclosed biological processes in which microorganisms break down biodegradable material in the presence of oxygen)	tonnes
Other – please specify .....	tonnes
<b>TOTAL</b>	= Question D2

**Section E – Mixed (unsorted) waste treatment processes**

*\*Mixed (unsorted) waste – is waste in which organic materials are mixed with non-organic materials during collection\**

E1. Did you compost or digest mixed (unsorted) waste at this site during 2007/08? (Excluding source segregated organic waste treatment which is covered in Section D)

- Yes – Please complete the rest of Section E                       No – Please go to Section F

E2. What was the total input of mixed (unsorted) waste to composting and/or digestion processes at this site in 2007/08? (Excluding source segregated organic waste treatment which is covered in Section D)

..... tonnes

E3. In the table below, please provide an approximate breakdown of the total input of mixed (unsorted) waste in 2007/08. (Excluding source segregated organic waste treatment which is covered in Section D)

Waste input	Tonnes of mixed (unsorted) waste input
Municipal waste (i.e. household waste and any other waste collected by or on behalf of local authorities)	tonnes
Non-municipal waste – please specify (i.e. commercial / trade / industrial wastes not collected by or on behalf of local authorities) .....	tonnes
<b>TOTAL</b>	= Question E2

E4. For each of the waste inputs you specified in Question E3 what percentage was organic (biodegradable)? (i.e. capable of decomposing rapidly by microorganisms under aerobic and/or anaerobic conditions)

Waste input	% that was organic (biodegradable)
Municipal waste	%
Non-municipal waste	%

E5. Was the active phase of treatment of the mixed (unsorted) waste at this site in 2007/08 aerobic or anaerobic? (Please select one option only)

- Aerobic (in the presence of oxygen)                       Anaerobic (in the absence of oxygen)

## Section F – Additional processing capacity

F1. Was the total amount of waste (both source segregated and mixed) processed at this site in 2007/08 the maximum that the site and its infrastructure could deal with?

- Yes – Please go to Question F3                       No – Please go to Question F2

F2. In the table below, please indicate how much additional waste could have been processed at this site in 2007/08 assuming that any existing restrictions placed on you by site infrastructure, site licences and planning consents remained in place. (Please include existing unused processing capacity only and take seasonality into account i.e., unused capacity should be capacity that is unused all year and not just during winter months for example)

Waste input	<u>Additional</u> waste that could have been processed in 2007/08
Source segregated waste	tonnes
Mixed (unsorted) waste	tonnes

F3. Do you have plans to expand the processing capacity of this site during the five year period from April 2008 to March 2013?

- Yes – Please go to Question F4                       No – Please go to Section G

F4. Are these plans for expansion definite with required permits and necessary investment already in place?

Yes – Please go to Question F5

No – Please go to Section G

F5. Excluding any existing unused processing capacity already entered for Question F2, please indicate how much additional annual processing capacity will be generated at this site as a result of the expansion.

Waste input	<b>Additional processing capacity planned</b>
Source segregated waste	tonnes per annum
Mixed (unsorted) waste	tonnes per annum

## Section G – Compost & digestate products

*\*Compost & digestate products – Products produced as a result of composting or anaerobically digesting source segregated waste. If quantity of products produced is unknown assume to be 60% of waste inputs\**

G1. In the table below, please provide an approximate breakdown of the compost and/or digestate products you produced at this site in 2007/08 and indicate whether these products were made from feedstocks which contained food waste. (Please note this question relates to compost/digestate products before blending and excludes mixed waste outputs which are covered in Section I)

Product type	Quantity of <b>compost</b> products produced (before blending) <i>(Delete units as appropriate)</i>	Quantity of <b>digestate</b> products produced from AD (before blending) <i>(Delete units as appropriate)</i>	Were these products made from feedstocks which included food waste?
<b>Soil conditioner</b> <i>(incorporated by digging or ploughing into soil to improve structure, nutrient and biological properties)</i>	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Mulch</b> <i>(surface application of large particles used to suppress weeds, retain moisture, prevent soil erosion and for decorative purposes)</i>	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Topsoil/subsoil manufacture</b> <i>(mixed with soils or other materials to produce topsoil or subsoil for landscape applications)</i>	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Growing medium constituent</b> <i>(material other than soils used alone or in mixtures to grow plants)</i>	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Turf (top) dressing</b> <i>(fine composts to improve establishment and growth of turf)</i>	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Other – please specify</b> <i>(e.g. landfill cover, biofuel) .....</i>	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>TOTAL PRODUCT PRODUCED</b>	<b>tonnes / m<sup>3</sup></b>	<b>tonnes / m<sup>3</sup></b>	

G2. What was the total quantity of compost products produced at this site during 2007/08 that was certified to BSI PAS 100? *(Please note this question relates to compost products only and excludes digestate products)*

..... tonnes / m<sup>3</sup> *(Delete units as appropriate)*

G3. What was the total quantity of compost products produced at this site during 2007/08 that was certified under the Quality Protocol? *(Please note this question relates to compost products only and excludes digestate products)*

..... tonnes / m<sup>3</sup> *(Delete units as appropriate)*

G4. In the table below, please provide an approximate breakdown of how the compost and/or digestate products produced at this site were used in 2007/08 and whether these products were made from feedstocks which contained food waste. *(Please note this question relates to compost/digestate products before blending and excludes mixed waste outputs which are covered in Section I)*

<b>Product use</b>	<b>Quantity of <u>compost</u> products (before blending)</b> <i>(Delete units as appropriate)</i>	<b>Quantity of <u>digestate</u> products (before blending)</b> <i>(Delete units as appropriate)</i>	<b>Were these products made from feedstocks which included food waste?</b>
Sold directly to end users	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sold on to third parties	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Distributed to end users or third parties with no charge	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Used on the site where it was produced	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Other – please specify .....	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>TOTAL PRODUCT PRODUCED</b>	= Total from Question G1	= Total from Question G1	

## Section H – Markets for compost & digestate products

H1. In the table below, please provide an approximate breakdown of the markets to which the compost and/or digestate products produced at this site were distributed in 2007/08 and indicate whether these products were made from feedstocks which contained food waste. *(Please note this question relates to compost/digestate products before blending and excludes mixed waste outputs which are covered in Section I)*

<b>Market sector</b>	<b>Quantity of compost products distributed (before blending)</b> <i>(Delete units as appropriate)</i>	<b>Quantity of digestate products distributed (before blending)</b> <i>(Delete units as appropriate)</i>	<b>Were these products made from feedstocks which included food waste?</b>
<b>Agriculture</b>	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Horticulture – professional</b> <i>(either via growing media manufacturers or direct to professional growers)</i>	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Horticulture – amateur</b> <i>(either via growing media manufacturers or direct to retail outlets, civic amenity sites)</i>	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Landscaping</b> <i>(to treat or improve usable land e.g. tree / shrub planting, bed establishment, topsoil manufacture)</i>	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Sports turf</b> <i>(e.g. golf, cricket, football)</i>	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Landfill restoration / daily cover</b>	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Energy recovery</b> <i>(e.g. burning oversize)</i>	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Forestry</b>	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Land restoration</b> <i>(to treat unusable, derelict, neglected or Brownfield land to bring it back to productive use e.g topsoil manufacture)</i>	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Other – please specify</b> .....	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>TOTAL COMPOST PRODUCT PRODUCED</b>	= Total from Question G1	= Total from Question G1	

H2. If you indicated in Question H1 that you distributed compost and/or digestate products to the agriculture sector in 2007/08 please provide an approximate breakdown for each of the agricultural crops where your products were used and whether these products were made from feedstocks which contained food waste.  
*(Please note this question relates to compost/digestate products before blending and excludes mixed waste outputs which are covered in Section I)*

<b>Main agricultural crop</b>	<b>Quantity of <u>compost</u> products distributed (before blending)</b> <i>(Delete units as appropriate)</i>	<b>Quantity of <u>digestate</u> products distributed (before blending)</b> <i>(Delete units as appropriate)</i>	<b>Were these products made from feedstocks which included food waste?</b>
Arable / cereals / combinable crops	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Vegetables / fruit / salad crops	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Grassland	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Glasshouse protected crops	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Other – please specify .....	tonnes / m <sup>3</sup>	tonnes / m <sup>3</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No

H3. Which of the following markets for compost and/or digestate products do you think offer the greatest potential for growth for your business in the next year? *(Please select all that apply)*

- Agriculture
- Horticulture – professional
- Horticulture – amateur
- Landscaping
- Sports turf
- Landfill restoration / daily cover
- Energy recovery
- Forestry
- Land restoration
- Other – please specify
- .....

H4. Please explain why you think the markets you specified in Question H3 offer the greatest potential for growth for your business in the next year.

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## Section I – Mixed waste derived outputs

**\*Mixed waste derived outputs** – Outputs produced as a result of mechanical biological treatment of mixed organic waste. If quantity of outputs produced is unknown assume to be 60% of waste inputs\*

(Please note this section relates to mixed organic waste derived outputs only. Please do not include dry recyclate such as plastics, glass and metals)

I1. In the table below, please provide an approximate breakdown of the mixed waste derived outputs you produced at this site in 2007/08. (Excluding compost & digestate products which are covered in sections G and H)

Output type	Quantity of mixed waste outputs (before blending) <i>(Delete units as appropriate)</i>
<b>Soil conditioner</b> <i>(incorporated by digging or ploughing into soil to improve structure, nutrient and biological properties)</i>	tonnes / m <sup>3</sup>
<b>Mulch</b> <i>(surface application of large particles used to suppress weeds, retain moisture, prevent soil erosion and for decorative purposes)</i>	tonnes / m <sup>3</sup>
<b>Topsoil/subsoil manufacture</b> <i>(mixed with soils or other materials to produce topsoil or subsoil for landscape applications)</i>	tonnes / m <sup>3</sup>
<b>Stabilised biowaste for disposal</b> <i>(stabilised material from mixed municipal waste processing)</i>	tonnes / m <sup>3</sup>
<b>Waste for direct disposal to landfill</b>	tonnes / m <sup>3</sup>
<b>Solid recovered fuel</b>	tonnes / m <sup>3</sup>
<b>Other – please specify</b> <i>(e.g. landfill cover, biofuel)</i> .....	tonnes / m <sup>3</sup>
<b>TOTAL MIXED WASTE OUTPUT PRODUCED</b>	<b>tonnes / m<sup>3</sup></b>

I2. In the table below, please provide an approximate breakdown of how the mixed waste outputs produced at this site were used in 2007/08. (Excluding compost & digestate products which are covered in sections G and H)

Mixed waste output use	Quantity of mixed waste outputs (before blending) <i>(Delete units as appropriate)</i>
Sold directly to end users	tonnes / m <sup>3</sup>
Sold on to third parties	tonnes / m <sup>3</sup>
Distributed to end users or third parties with no charge	tonnes / m <sup>3</sup>
Used on the site where it was produced	tonnes / m <sup>3</sup>
Disposed of directly to landfill	tonnes / m <sup>3</sup>
Other disposal with cost associated	tonnes / m <sup>3</sup>
Other – please specify .....	tonnes / m <sup>3</sup>
<b>TOTAL MIXED WASTE OUTPUT PRODUCED</b>	= Total from Question I1

I3. In the table below, please provide an approximate breakdown of the outlets to which the mixed waste outputs produced at this site were distributed in 2007/08. (Excluding compost & digestate products which are covered in sections G and H)

Outlet	Quantity of mixed waste outputs (before blending) <i>(Delete units as appropriate)</i>
<b>Land restoration</b> <i>(to treat unusable, derelict, neglected or Brownfield land to bring it back to productive use e.g topsoil manufacture)</i>	tonnes / m <sup>3</sup>
Landfill restoration / daily cover	tonnes / m <sup>3</sup>
<b>Landscaping</b> <i>(to treat or improve usable land e.g. tree / shrub planting, bed establishment, topsoil manufacture)</i>	tonnes / m <sup>3</sup>
Agriculture	tonnes / m <sup>3</sup>
Energy (solid recovered fuel)	tonnes / m <sup>3</sup>
Direct disposal to landfill	tonnes / m <sup>3</sup>
Other disposal with cost associated	tonnes / m <sup>3</sup>
Other – please specify .....	tonnes / m <sup>3</sup>
<b>TOTAL MIXED WASTE OUTPUT PRODUCED</b>	= Total from Question I1

**Section J – Further comments and feedback**

The Association for Organics Recycling and WRAP are continually looking at ways to improve this survey and we would appreciate your feedback. We are considering conducting this survey online in future years. Please indicate whether or not you would prefer this option?

- Yes, I would prefer to complete the survey online       No, I prefer to complete the survey manually

Please provide any additional comments you may have on this survey or any of the issues it covers.

.....

.....

.....

.....

.....

**Thank you for taking the time to complete this survey form.**

## Appendix 2

### Community composting activity in the UK – 2006 (Defra funded project WR0211)

#### The Community Composting Sector

It is well known that the community composting sector is made up of a diverse range of groups and organisations. All these companies operate on a not-for-profit basis and while community composting is often a main focus, other environmental, social and educational objectives are also important. Consequently the survey design used for the commercial composting sector was considered to be inappropriate for the community composting sector and the community sector was therefore not specifically included in the main survey.

However, a separate project called 'Unlocking the Potential of Community Composting' profiled and characterised the community composting sector in the UK in 2006. This work was funded by Defra under their Waste and Resources R&D Programme (ref WR0211). The project was carried out by the Integrated Waste Systems group at The Open University in association with the Community Composting Network (CNN), London Community Recycling Network (LCRN) and the New Economics Foundation. After checking with CNN

for an update of the community sector in 2007, it was advised that composting activity in the community sector in 2007/08 would have stayed broadly the same as in 2006. Therefore the survey results for the 2006 project can be used as a proxy for 2007/08.

The first part of the project is a survey of the environmental, social and educational activities of organisations involved in promoting or carrying out composting activity in their communities. The survey report "Community composting activity in the UK – 2006" has been published by Integrated Waste Systems, The Open University, Milton Keynes in May 2007. It is available via the following website link:

[http://technology.open.ac.uk/iws/docs/cc%20report\\_Final.pdf](http://technology.open.ac.uk/iws/docs/cc%20report_Final.pdf)

The findings presented in the above report represent the first time a comprehensive profiling of the community composting sector has been conducted and results published. The data reported are for the 2006 calendar year. In total 243 organisations were surveyed.

## Appendix 3

### National and regional breakdown of wastes input to composting

#### Regional breakdown of wastes input to composting

##### Comparison of survey data with municipal waste data

Table A3.1 shows the quantities of municipal wastes input to composting in 2007/08 by survey respondents. The table also shows the quantities of municipal wastes input to composting which came from Civic Amenity (CA) site collections and from kerbside collections on a regional basis for England, and on a national basis for the other UK countries. These data then have been compared with official municipal waste data on the quantity of waste collected by local authorities in these regions / countries to calculate the percentages of CA and kerbside waste arising in each region / country that has been captured by 2007/08 survey (i.e. that has been composted by survey respondents in that region/country in 2007/08). However, while this is a useful measure it should be noted that not all waste

collected for composting will be composted in the region where it is collected. Official municipal waste data has been obtained from WasteDataFlow for 2007/08. WasteDataFlow is the web based system for local authority waste data reporting to government.

Overall 69% of civic amenity waste for composting has been captured by the survey, and 46% of kerbside waste. It is not clear why there is this difference.

There are some figures over 100% for CA waste in East Midlands, North West and South East England. This could be due to either waste from CA sites from outside these regions being composted within the regions or that there is an issue of under reporting to WasteDataFlow.

Between the nations, the capture rate for civic amenity waste was highest for England at 82% and lowest for Northern Ireland at 43%. The capture rate for kerbside waste was highest for Northern Ireland at 67% and lowest for England at 44%.

**Table A3.1** Regional and national comparison of wastes input to composting by survey respondents with municipal waste data 2007/08

	<b>MSW input survey respondents</b>	<b>Survey respondents CA input tonnes</b>	<b>Survey capture rate of CA waste</b>	<b>Survey respondents kerbside input tonnes</b>	<b>Survey capture rate of kerbside waste</b>
<b>England</b>					
East Midlands	303,139	116,206	103%	181,069	70%
East of England	334,851	112,099	85%	138,299	41%
London	130,377	34,174	45%	96,086	71%
North East	99,290	36,340	94%	58,240	87%
North West	222,189	123,055	132%	99,034	28%
South East	408,481	285,359	108%	112,331	49%
South West	141,384	98,016	54%	20,508	10%
West Midlands	228,862	90,247	100%	124,615	45%
Yorkshire & the Humber	98,482	25,967	22%	59,864	38%
<b>England total</b>	<b>1,967,055</b>	<b>921,463</b>	<b>83%</b>	<b>890,047</b>	<b>44%</b>
Wales	89,141	43,112	74%	41,886	50%
Scotland	202,435	56,213	77%	128,346	63%
Northern Ireland	62,830	24,640	44%	38,190	68%
<b>UK TOTAL</b>	<b>2,321,461</b>	<b>1,045,428</b>	<b>81%</b>	<b>1,098,469</b>	<b>47%</b>

### Quantities and types of waste composted in individual UK countries and in regions of England

Table A3.2 shows the quantity and type of waste composted by survey respondents in the individual UK nations and Table A3.3 shows this information for the England regions. It should be noted that the waste quantities in these tables have not been grossed up to allow for survey non respondents. They are the combined quantities from survey respondents.

Table A3.2 shows that in Northern Ireland and Scotland kerbside collected waste for composting makes up a higher percentage of the total input of wastes to composting at 59% and 47% respectively of

wastes composted compared with only 38% and 21% respectively from civic amenity sites. Both England and Wales had more composting of civic amenity site waste than kerbside collected waste.

Table A3.3 shows that the Yorkshire and the Humber region has an atypical waste input pattern. All the other regions have municipal waste composting dominating non municipal waste composting with at least 85% of input waste being municipal. For the Yorkshire and Humber region, only 68% of the waste composted by survey respondents is municipal with the remaining 32% being a range of non municipal waste types. This is a similar pattern to what was found last year in the 2006/07 survey results.

**Table A3.2** Quantities and types of waste composted by survey respondents in UK countries, 2007/08

	England		Northern Ireland		Scotland		Wales	
	Input Tonnages	% of Total	Input Tonna ges	% of Total	Input Tonnages	% of Total	Input Tonna ges	% of Total
<b>Municipal waste</b>								
Garden waste from civic amenity/bring sites	921,463	42%	24,640	38%	56,213	21%	43,112	46%
Garden waste only from kerbside collection	644,729	29%	36,670	57%	128,346	47%	24,186	26%
Garden and food waste from kerbside collection	237,144	11%	1,520	2%	0	0%	17,700	19%
Food waste only from kerbside collection	8,174	<1%	0	0%	0	0%	0	0%
Council parks / gardens waste and green waste from educational institutes	18,618	1%	0	0%	17,098	6%	4,143	4%
Council-collected food processing by-products and food waste from retailers	5,000	<1%	0	0%	0	0%	0	0%
Other municipal waste - please specify	131,927	6%	0	0%	778	<1%	0	0%
<b>Total municipal waste</b>	<b>1,967,055</b>	<b>89%</b>	<b>62,830</b>	<b>98%</b>	<b>202,435</b>	<b>74%</b>	<b>89,141</b>	<b>95%</b>
<b>Non municipal waste</b>								
Landscape / grounds maintenance	76,682	3%	1,520	2%	9,529	3%	4,226	5%
Forestry / timber / bark / by-products	900	<1%	0	0%	363	<1%	0	0%
Food waste from retailers / catering establishments	15,600	1%	0	0%	0	0%	0	0%
Food waste from other commercial establishments	53,293	2%	0	0%	23,675	9%	0	0%
Food waste from industrial establishments	22,680	1%	0	0%	1,000	<1%	0	0%
Other non municipal waste - please specify	72,434	3%	0	0%	35,506	13%	0	0%
<b>Total non municipal waste</b>	<b>241,589</b>	<b>11%</b>	<b>1,520</b>	<b>2%</b>	<b>70,073</b>	<b>26%</b>	<b>4,226</b>	<b>5%</b>
Unspecified waste input	0	0%	0	0%	265	<1%	19	<1%
<b>Total</b>	<b>2,208,644</b>	<b>100%</b>	<b>64,350</b>	<b>100%</b>	<b>272,773</b>	<b>100%</b>	<b>93,386</b>	<b>100%</b>

**Table A3.3** Regional data on wastes composted by survey respondents in England's regions, 2007/08 – part 1

	East Midlands		East of England		London		North East	
	Input Tonnages	% of Total	Input Tonnages	% of Total	Input Tonnages	% of Total	Input Tonnages	% of Total
<b>Municipal waste</b>								
Garden waste from civic amenity/bring sites	116,206	34%	112,099	29%	34,174	25%	36,340	36%
Garden waste only from kerbside collection	116,384	34%	87,299	23%	19,269	14%	58,240	57%
Garden and food waste from kerbside collection	64,685	19%	50,000	13%	74,944	55%	0	0%
Food waste only from kerbside collection		0%	1,000	<1%	1,874	1%	0	0%
Council parks / gardens waste and green waste from educational institutes	864	<1%	3,949	1%	0	0%	4,710	5%
Council-collected food processing by-products and food waste from retailers	0	0%	0	0%	0	0%	0	0%
Other municipal waste - please specify	5,000	2%	80,504	21%	116	<1%		0%
<b>Total</b>	<b>303,139</b>	<b>89%</b>	<b>334,851</b>	<b>87%</b>	<b>130,377</b>	<b>96%</b>	<b>99,290</b>	<b>97%</b>
<b>Non municipal waste</b>								
Landscape / grounds maintenance	6,948	2%	16,963	4%	4,500	3%	2,710	3%
Forestry / timber / bark / by-products	0	0%	0	0%	0	0%	0	1%
Food waste from retailers / catering establishments	0	0%	0	0%	350	<1%	0	0%
Food waste from other commercial establishments	30,000	9%	13,036	3%	0	0%	0	0%
Food waste from industrial establishments	0	0%	12,480	3%	0	0%	0	0%
Other non municipal waste - please specify	485	<1%	6,000	2%	0	0%	0	0%
<b>Total non municipal waste</b>	<b>37,433</b>	<b>11%</b>	<b>48,479</b>	<b>13%</b>	<b>4,850</b>	<b>4%</b>	<b>2,710</b>	<b>3%</b>
<b>Unspecified waste input</b>	<b>0</b>	<b>0%</b>						
<b>Total</b>	<b>340,572</b>	<b>100%</b>	<b>383,330</b>	<b>100%</b>	<b>135,227</b>	<b>100%</b>	<b>102,000</b>	<b>100%</b>

**Table A3.3** Regional data on wastes composted by survey respondents in England's regions, 2007/08 – part 2

	North West		South East		South West		West Midlands		Yorkshire & The Humber	
	Input Tonnages	% of Total	Input Tonnages	% of Total						
<b>Municipal waste</b>										
Garden waste from civic amenity/bring sites	123,055	53%	285,359	60%	98,016	66%	90,247	37%	25,967	18%
Garden waste only from kerbside collection	99,034	42%	96,531	20%	20,508	14%	92,600	38%	54,864	38%
Garden and food waste from kerbside collection	0	0%	10,500	2%	0	0%	32,015	13%	5,000	3%
Food waste only from kerbside collection	0	0%	5,300	1%	0	0%	0	0%	0	0%
Council parks / gardens waste and green waste from educational institutes	100	<1%	791	<1%	1,535	1%	6,000	3%	669	<1%
Council-collected food processing by-products and food waste from retailers	0	0%	0	0%	0	0%	0	0%	5,000	3%
Other municipal waste - please specify	0	0%	10,000	2%	21,325	14%	8,000	3%	6,982	5%
<b>Total municipal waste</b>	<b>222,189</b>	<b>95%</b>	<b>408,481</b>	<b>85%</b>	<b>141,384</b>	<b>95%</b>	<b>228,862</b>	<b>95%</b>	<b>98,482</b>	<b>68%</b>
<b>Non municipal waste</b>										
Landscape / grounds maintenance	5,907	3%	31,016	7%	5,680	4%	640	<1%	2,318	2%
Forestry / timber / bark / by-products	0	0%	500	<1%	0	0%	0	0%	400	<1%
Food waste from retailers / catering establishments	0	0%	0	0%	0	0%	0	0%	15,250	10%
Food waste from other commercial establishments	3,000	1%	0	0%	0	0%	7,257	3%	0	0%
Food waste from industrial establishments	0	0%	7,000	2%	0	0%	3,200	1%	0	0%
Other non municipal waste - please specify	2,806	1%	31,100	7%	1,779	1%	1,751	1%	28,513	20%
<b>Total non municipal waste</b>	<b>11,713</b>	<b>5%</b>	<b>69,616</b>	<b>15%</b>	<b>7,459</b>	<b>5%</b>	<b>12,848</b>	<b>5%</b>	<b>46,481</b>	<b>32%</b>
<b>Total</b>	<b>233,902</b>	<b>100%</b>	<b>478,097</b>	<b>100%</b>	<b>154,630</b>	<b>100%</b>	<b>267,720</b>	<b>100%</b>	<b>144,963</b>	<b>100%</b>

## Appendix 4

### National and regional manufacture of compost products

#### National and regional manufacture of compost products

The quantities of compost products manufactured from source segregated wastes in each of the countries of the UK in 2007/08 by survey respondents are shown in Table A4.1 below. The proportion that each product makes up of the total produced is also shown. The

quantities have not been grossed up to allow for survey non respondents.

Table A4.2 shows the quantities of different compost products manufactured in the English regions by survey respondents and the proportion that each product type made up of the total produced in 2007/08.

**Table A4.1** Compost products manufactured by survey respondents in UK countries, 2007/08

	England	Northern Ireland	Scotland	Wales
	<b>Quantity (tonnes)</b>			
Soil conditioner	872,671	36,800	115,783	29,394
Mulch	54,610	0	575	8,150
Topsoil/subsoil	78,341	0	27,909	4,500
Growing medium	128,358	0	5,785	0
Turf (top) dressing	19,630	0	143	2,700
Other	108,165	0	2,243	346
Unspecified	-	-	-	-
<b>Total</b>	<b>1,261,775</b>	<b>36,800</b>	<b>152,438</b>	<b>45,090</b>
	<b>Proportion of total produced</b>			
Soil conditioner	69%	100%	76%	65%
Mulch	4%	0%	<1%	18%
Topsoil/subsoil	6%	0%	18%	10%
Growing medium	10%	0%	4%	0%
Turf (top) dressing	2%	0%	<1%	6%
Other	9%	0%	2%	1%
Unspecified	-	-	-	-
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

**Table A4.2** Compost products manufactured by survey respondent in the regions of England, 2007/08 Appendix 5

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorkshire & The Humber
	<b>Quantity (tonnes)</b>								
Soil conditioner	115,469	138,827	53,421	43,100	88,575	170,760	77,525	127,448	57,546
Mulch	21,066	10,919	219	0	400	13,000	6,136	2,870	
Topsoil/subsoil	4,915	37,134	300	4,000	19,492	7,100		3,400	2,000
Growing medium	36,700	11,675	3,500	6,100	30,012	13,760		11,830	14,781
Turf (top) dressing	7,115	375	3,500	0	1,250	2,580	10	2,800	2,000
Other	20,715	4,721	4,310	0	0	53,798	3,268	12,287	9,066
Unspecified	.	-	-	-	-	-	-	-	-
<b>Total</b>	<b>205,980</b>	<b>203,651</b>	<b>65,250</b>	<b>53,200</b>	<b>139,729</b>	<b>260,998</b>	<b>86,939</b>	<b>160,635</b>	<b>85,393</b>
	<b>Proportion (%)</b>								
Soil conditioner	56%	68%	82%	81%	63%	65%	89%	79%	67%
Mulch	10%	5%	<1%	0%	<1%	5%	7%	2%	0%
Topsoil/subsoil	2%	18%	<1%	7.5%	14%	3%	0%	2%	2%
Growing medium	18%	6%	5%	11.5%	22%	5%	0%	7%	17%
Turf (top) dressing	4%	<1%	5%	0%	1%	1%	0%	2%	2%
Other	10%	2%	7%	0%	0%	21%	4%	8%	11%
Unspecified	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

## Appendix 5

### Compost product distribution – the national and regional picture

#### Compost product distribution in the countries of the UK and the English regions

Table A5.1 shows how compost products were distributed in the UK countries in 2007/08. The quantities are not grossed up to allow for survey non respondents.

It can be seen in Table A5.1 that in Scotland a higher proportion, 57%, of compost was sold directly to end users compared with 34% for England, and 33% for

Wales. More compost was sold to third parties in England and Wales. This indicates less blending to make compost products in Scotland than in England. All the compost in Northern Ireland (100%) was used on the site of production.

Table A5.2 shows how compost products produced in the different regions of England by survey respondents were distributed in 2007/08. Again, there has been no grossing up of the quantities to allow for survey non respondents.

**Table A5.1** Compost product distribution in the UK countries, 2007/08

	England	Northern Ireland	Scotland	Wales
	<b>Quantity (tonnes)</b>			
Sold directly to end users	429,725	0	86,458	14,750
Sold on to third parties	179,465	0	11,476	7,652
Distributed (no charge)	238,170	0	15,500	8,202
Used on site	379,689	36,800	32,467	14,487
Other	31,494	0	5,005	0
<b>Total</b>	<b>1,258,543</b>	<b>36,800</b>	<b>150,906</b>	<b>45,091</b>
	<b>Proportion (%)</b>			
Sold directly to end users	34%	0%	57%	33%
Sold on to third parties	14%	0%	8%	17%
Distributed (no charge)	19%	0%	10%	18%
Used on site	30%	100%	22%	32%
Other	3%	0%	3%	0%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

**Table A5.2** Compost product distribution for survey respondents for compost produced in each region of England, 2007/08

	East Midlands	East of England	London	North East	North West	South East	South West	West Midlands	Yorkshire & The Humber
	<b>Quantity (tonnes)</b>								
Sold directly to end users	84,145	81,869	41,272	14,700	58,450	54,760	17,844	70,438	6,247
Sold on to third parties	34,455	44,459		25,000	27,292	38,990	251	1,070	7,948
Distributed (no charge)	25,108	42,100	15,620	3,500	4,970	19,900	9,082	67,000	50,890
Used on site	62,542	35,223	4,858	5,000	49,017	122,148	59,760	22,127	19,014
Other	0	0	0	5,000	0	25,200	0	0	1,294
<b>Total</b>	<b>206,250</b>	<b>203,651</b>	<b>61,750</b>	<b>53,200</b>	<b>139,729</b>	<b>260,998</b>	<b>86,937</b>	<b>160,635</b>	<b>85,393</b>
	<b>Proportion (%)</b>								
Sold directly to end users	41%	40%	67%	28%	42%	21%	21%	44%	7%
Sold on to third parties	17%	22%	0%	47%	19%	15%	<1%	<1%	9%
Distributed (no charge)	12%	21%	25%	7%	4%	8%	10%	42%	60%
Used on site	30%	17%	8%	9%	35%	47%	69%	14%	22%
Other	0%	0%	0%	9%	0%	10%	0%	0%	2%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

## Appendix 6

### Markets for composted products – the national and regional picture

#### Markets for composted products in 2007/08 in UK countries and English regions

Scotland and Wales had much lower percentages of composted products going to agriculture with 30% and 12% respectively than England and Northern Ireland which had 51% and 60% respectively. Scotland and Wales had much higher proportions of compost

product going to land restoration uses than England or Northern Ireland.

Table A6.2 shows the quantities of compost product going into the different markets for the English regions.

**Table A6.1** Markets for composted products in UK countries, 2007/08

	England		Northern Ireland		Scotland		Wales	
	Tonnes	% of total	Tonnes	% of total	Tonnes	% of total	Tonnes	% of total
Agriculture	625,932	51%	22,000	60%	42,070	30%	5,500	12%
Horticulture - professional	32,954	3%	0	0%	5,959	4%	0	0%
Horticulture - amateur	122,749	10%	0	0%	5,214	4%	368	1%
Landscaping	155,350	13%	800	2%	26,738	19%	13,574	30%
Sports turf	25,873	2%	0	0%	1,643	1%	0	0%
Landfill restoration / daily cover	176,499	14%	14,000	38%	13,425	10%	12,337	27%
Energy recovery	6,198	<1%	0	0%	1,945	1%	0	0%
Forestry	510	<1%	0	0%	0	0%	0	0%
Land restoration	43,491	4%	0	0%	38,435	27%	13,311	30%
Other - please specify	38,122	3%	0	0%	6,469	5%	0	0%
<b>Total</b>	<b>1,227,678</b>	<b>100%</b>	<b>36,800</b>	<b>100%</b>	<b>141,898</b>	<b>100%</b>	<b>45,090</b>	<b>100%</b>

**Table A6.2** Regional breakdown of markets for composted products manufactured in the English regions, 2007/08

	East Midlands		East of England		London		North East	
	Tonnes	% of total	Tonnes	% of total	Tonnes	% of total	Tonnes	% of total
Agriculture	87,347	42%	118,572	58%	25,830	60%	12,634	24%
Horticulture - professional	3,015	2%	10,543	5%	431	1%	7,920	15%
Horticulture - amateur	44,440	22%	6,272	3%	3,105	7%	6,233	12%
Landscaping	24,575	12%	51,043	25%	6,244	15%	18,333	35%
Sports turf	4,000	2%	150	<1%	0	0%	0	0%
Landfill restoration / daily cover	40,942	20%	7,721	4%	2,500	6%	4,580	9%
Energy recovery	1,336	<1%	0	0%	4,310	10%	0	0%
Forestry	0	0%	0	0%	0	0%	0	0%
Land restoration	0	0%	7,350	4%	431	1%	3,500	7%
Other - please specify	325	<1%	2,000	1%	0	0%	0	0%
<b>Total</b>	<b>205,980</b>	<b>100%</b>	<b>203,651</b>	<b>100%</b>	<b>42,851</b>	<b>100%</b>	<b>53,200</b>	<b>100%</b>

**Table A6.2 (continued)** Regional breakdown of markets for composted products manufactured in the English regions, 2007/08

	North West		South East		South West		West Midlands		Yorkshire & Humber	
	Tonnes	% of total	Tonnes	% of total	Tonnes	% of total	Tonnes	% of total	Tonnes	% of total
Agriculture	26,430	19%	116,040	45%	65,615	76%	120,968	81%	52,496	62%
Horticulture - professional	1,000	1%	6,070	2%	1,026	1%	0	0%	2,949	4%
Horticulture - amateur	32,967	24%	10,510	4%	1,870	2%	5,580	4%	11,772	14%
Landscaping	16,301	12%	12,510	5%	8,804	10%	11,100	7%	6,440	7%
Sports turf	15,523	11%	3,300	1%	900	1%	0	0%	2,000	2%
Landfill restoration / daily cover	36,007	26%	70,348	27%	0	0%	5,887	4%	8,514	10%
Energy recovery	0	0%	0	0%	0	0%	0	0%	552	1%
Forestry	0	0%	510	<1%	0	0%	0	0%	0	0%
Land restoration	11,500	8%	20,710	8%	0	0%	0	0%	0	0%
Other - please specify	0	0%	20,000	8%	8,722	10%	6,400	4%	675	1%
<b>Total</b>	<b>139,728</b>	<b>100%</b>	<b>259,998</b>	<b>100%</b>	<b>86,937</b>	<b>100%</b>	<b>149,935</b>	<b>100%</b>	<b>85,398</b>	<b>100%</b>

## Appendix 7

### Unused composting capacity in 2007/08 and additional composting capacity becoming available regionally and nationally

#### Unused composting capacity in 2007/08 and additional composting capacity becoming available regionally and nationally

Table A7.1 shows unused composting capacity in 2007/08, and definite new capacities becoming available

during the next five years for the UK countries, and for the English regions. The capacities have not been grossed up to allow for survey non respondents.

**Table A7.1** Unused composting capacity in the UK, 2007/08 and definite new capacity becoming available during the next five years

	2007/08 unused source segregated capacity (000' tonnes)	2007/08 unused mixed waste capacity (000' tonnes)	Definite new capacity during next 5 years		Totals (000' tonnes)
			Source segregated at existing sites (000' tonnes)	Non source segregated at existing sites (000' tonnes)	
<b>England</b>					
East Midlands	81	-	60	-	141
East of England	151	-	88	10	249
London	6	34	5	-	45
North East	36	-	22	-	58
North West	118	25	55	20	218
South East	68	51	52	-	171
South West	321	-	78	-	399
West Midlands	76	-	65	-	141
Yorkshire & the Humber	48	-	10	-	58
<b>England total</b>	<b>905</b>	<b>110</b>	<b>435</b>	<b>30</b>	<b>1,480</b>
Wales	63	25	10	10	108
Scotland	100	2	125	0	227
Northern Ireland	0	0	0	0	0
<b>Total</b>	<b>1,068</b>	<b>137</b>	<b>570</b>	<b>40</b>	<b>1,815</b>

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Published by:



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