

3. How much waste is generated, reused and recycled?

Although there are numerous data sources that can be used to determine the amount of construction resources used, wasted, and managed through different recovery routes, these data vary hugely in terms of scope, frequency, reliability and accessibility.

Ideally, data would be available to provide national baselines on waste generation, so that targets could be set for waste reduction and measure improvements in future years.

Unfortunately, only a limited dataset exists and this is of little help when determining priorities for resource efficiency, other than primary aggregate replacement. In particular, there is little breakdown of current data, which also excludes most of the materials that would be classed as 'active' i.e. attracting a higher rate of landfill tax. Fundamental knowledge gaps are illustrated in Table 2.

Waste management and efficient use of materials are issues facing all sectors of industry in England. The relative impact of construction sector waste, when set against overall waste arisings in England, is shown in Figure 2.

As Figure 2 shows, construction and demolition account for the single largest waste stream, with additional construction-related waste included in the 'industrial' (construction product manufacture), and 'mining & quarrying' (primary aggregates/raw material production) sectors.

When producing this roadmap, attempts were made to refine the waste stream further into:

- construction
- refurbishment
- demolition waste.

The Construction Waste Compendium (Annex 1) reviews most of the disparate sources of data using a consistent format. The key findings are summarised in this Section, with the following provisos:

- It was possible to extrapolate waste benchmark data for new housing construction waste. However, attempting the same for housing refurbishment waste was not possible because of a lack of data

Waste generating activity	Inert waste: aggregate potential (Mtonnes)	Active waste: non-aggregate potential (Mtonnes)	Overall amount (Mtonnes)	Total
Construction	Currently unknown	Currently unknown	Currently unknown	Currently unknown
Demolition	Currently unknown	Currently unknown	Currently unknown	Currently unknown
Refurbishment	Currently unknown	Currently unknown	Currently unknown	Currently unknown
Excavation	Currently unknown	Currently unknown	Currently unknown	Currently unknown
Total	89.63 million ± 9%*	Currently unknown	Currently unknown	Currently unknown

*National estimates of construction, demolition and excavation waste (CDEW) recycled by crushers and/or screens, used/disposed of at landfills, and spread on Paragraph 9A(1) and 19A(2) registered exempt sites in England in 2005 (million tonnes). Source: *CDEW Survey of Arisings and Use of Alternatives to Primary Aggregates in England 2005* (CLG, 2007).

Table 2 Knowledge gaps

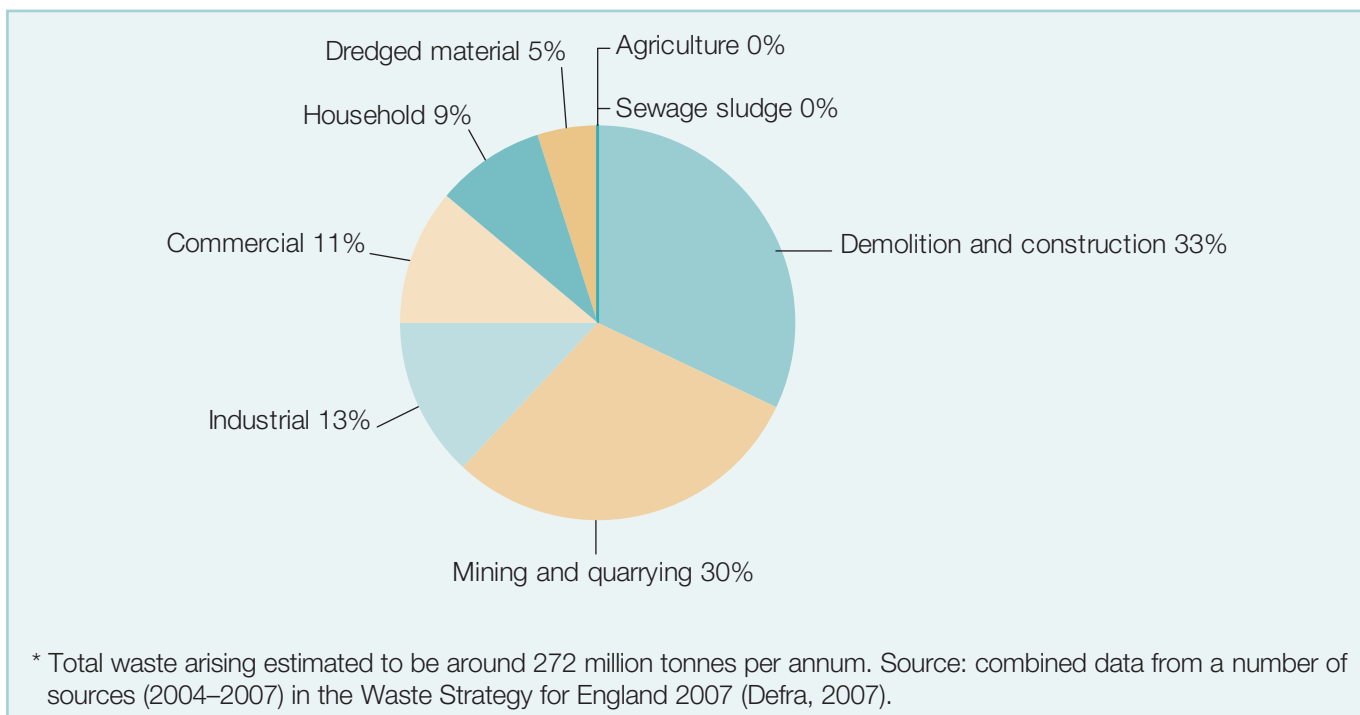


Figure 2 Estimated waste arisings in England by sector

on levels of activity. Other refurbishment activities were not considered due to a lack of data.

- Using data from the NFDC (NFDC, 2002) and BigREc Survey (Salvo, 1998) produced an overall waste arising from demolition of around 26 million tonnes per year. However, when compared to the CDEW Survey (CLG, 2007) there is a gap of over 60 million tonnes which is unaccounted for.

Construction products

Knowing the amount and types of resources being used by the construction sector is a fundamental starting point. AMA Research was commissioned to draw together relevant data and this is summarised in Table 3 (overleaf) and discussed in Annex 2.

The only complete dataset is for ‘value’. This, of course, is of use when identifying key construction products (Figure 3).

Headline figures

Based on this research, the headline figures for construction products are:

Headline figures: construction products 2005^[3]

Total mass = 376 million tonnes
 Total recycled/secondary mass = 80 million tonnes (or 21%)
 Total value = £28 billion

Previous data was collected in 1998 (Biffaward & Viridis, 2002) using much of the same primary data source (Prodcop reports) but not the same methodology. Here the headline figures were:

Headline figures: construction products 1998^[3]

Total mass = 363 million tonnes
 Total recycled/secondary mass = 65 million tonnes (or 18%)
 Total reclaimed mass = 3 million tonnes

^[3]Note: data gaps mean these headline figures are less than actual figures (see Annex 2).

Integrated transport and the 10 Year Plan

Understanding the issues

What is integrated transport?

It depends
who you are,
where you are,
what you want it to be,
what you want it to do!

If you're the public, rightly or wrongly you probably think it means one or more of the following, the choice depending on what sort of journey you've just had:

- A seamless journey using different means of transport, which will readily take you (and whoever you want to go with) wherever you want to go, whenever you want to go (and of course get you back – even late at night and at weekends) with minimum hassle.
- A means by which:
 - public transport will be more attractive and convenient
 - congestion will be reduced so that it's no longer a problem
 - trains will run on time, be reliable, clean, comfortable and safe
 - much freight will be shifted from road to rail
 - we – not you of course – will give up our cars in favour of public transport, cycling or walking
 - all the country's transport problems will be solved.



- We've far less of everything in terms of transport infrastructure – roads, rail, light rail and motorways. Looks like fewer buses too.
- The UK's congestion figures are way over the top compared with most other EU countries – significantly higher than for any other country save Portugal.
- Car ownership is not outrageously high in the UK and is less than in France, Germany and Italy, and is significantly below the EU average.
- Commuting time is the highest of any EU country, which seems to reflect, in part, population density.
- Bus use is lower than in any other country save France.
- Rail use is lower than in any other country save Spain.



Table 10. Comparison of European transport system provision in kilometres per million people (km/m)

Country	Railways		Light rail (electric railways)		Roads		Motorways	
	km/m	Rank	km/m	Rank	km/m	Rank	km/m	Rank
Belgium	335	9	250	5	14,000	6	165	=5
Denmark	420	8	120	11	13,600	7	165	=5
Germany	465	7	225	7	7,950	12	140	=8
Greece	240	14	0	15	10,950	10	45	14
Spain	310	10	175	9	4,200	15	225	2
France	540	5	245	6	16,550	2	185	4
Ireland	525	6	10	14	24,850	1	30	15
Italy	280	13	180	8	5,450	14	115	10
Luxembourg	680	4	645	2	12,500	8	290	1
The Netherlands	180	15	130	10	8,150	11	140	=8
Austria	700	3	420	3	16,050	3	200	3
Portugal	290	=11	90	=12	12,000	9	80	12
Finland	1,150	2	400	4	15,300	5	100	11
Sweden	1,270	1	90	1	6,650	4	165	=5
UK	290	=11	90	=12	6,650	13	60	13
EU ^a	410		195		9,400		135	–
USA	140 ^b /900		10		24,300		305	
World	210		40		4,800		35	

Sources: *EU Energy and Transport in Figures: Statistical Pocketbook 2001* (EC, 2001, Tables 1.3, 3.2.1, 3.2.5 and 3.2.6); *EU Energy and Transport in Figures: Statistical Pocketbook 2000* (EC, 2000, Table 2.4).

^a Average of the 15 countries listed.

^b Passenger railways.

And what about the M1, M6 and the M25 and all those other blocked up motorways, and me getting from here to there?

That comes under the heading **'inter-urban'**. Here it's split between rail and roads.

For rail:

A bigger, better and faster *railway*:

- higher standards of safety, service and comfort
- reduced crowding
- the Channel Tunnel rail link plus upgrading of the East and West Coast lines
- improved protection and warning systems
- a 50% increase in passengers
- an 80% growth in rail freight
- cross rail links.

That target for a 50% increase in rail passengers over the 10 year period of the Government's transport strategy is, however, pretty meaningless on two counts:

- It fails to relate it to any qualitative terms – not comfort, reliability, seating availability, cleanliness, frequency or speed. The majority of passengers – certainly commuting passengers – want improvements in quality, not more people being squashed into already overcrowded, grubby carriages with uncertain departure and arrival times.

18 February 2002. Stephen Byers published Rail Performance Indicators ...

- punctuality and reliability
- safety
- quality – the average age of the rolling stock.

Byers said: 'This set of indicators focuses on the issues that matter most to passengers: punctuality, reliability, safety and quality ...'.

But what a way to measure quality! The age of the rolling stock! Really! Is that it? And there are no targets for improvement whilst the base benchmarks are so low that it will be practically impossible not to show some improvement over time!

Investment in the London Underground

£16 billion to be spent upgrading the Underground ... but that's over 15 years – roughly £1 billion per year.

There were 970 million passenger journeys made in 2000–2001, so the planned investment is about £1 per journey. (Meanwhile it's losing 29p on every journey made.)