

THE WASTE CHALLENGE

The overall requirement for waste recovery is set to increase over the coming decade and beyond as EU and UK Government policies and legislation seek to shift greater quantities of waste from landfill to alternative waste management methods.

The most significant legislation affecting waste management, and the move away from landfill to other forms of treatment, comes from the EU. Beginning with the EU Packaging & Packaging Waste Directive in 1994, a sequence of new Directives and amendments have been introduced aimed at reducing the quantity of specific types of waste going to landfill, and increasing waste recovery and recycling. EU legislation applies to the UK as a whole - England, Wales, Scotland and Northern Ireland.

The estimated additional tonnages of waste to be recycled and recovered as a result of EU Directive targets are shown in Table 1 below.

Legislation/ policy	Waste recovery/recycling	Baseline year	Target date	Additional tonnage recovery/ recycling (000 tonnes)
EU Landfill Directive	BMW recovery ^(a)	1995	2010	7,394 - 13,971
			2013	11,647 - 20,819
2020			14,198 - 30,401	
	Tyre recovery ^(b)	2000	2006	217
EU Packaging and Packaging Waste Directive	Packaging waste recycling:	2001	2008	
	Paper/Board			204
	Plastics			198
	Aluminium			32
	Steel			52
	Glass			579
	Wood			-
Total Recycling	1,391			
Total Recovery	1,329			
EU End-of- Life Vehicle Directive	ELV reuse & recovery ^(a)	2000	2006	92 – 440
			2015	303 - 1,420
EU Waste Electrical and Electronic Equipment Directive ^(c)	Large household appliances	1998	2006	0 – 87
	Small household appliances			15 – 22
	IT & telecomms equipment			138 – 251
	Consumer equipment			44 – 66
	Lighting equipment			NO DATA
	Electrical and electronic tools			14 – 20
	Toys			4 – 6
	Monitoring and control instruments			4 – 6
	Automatic dispensers			NO DATA
Gas discharge lamps	9 – 14			

Table 1: A summary of the imposition of future recovery/recycling of waste targets in the UK.
Notes: BMW abbreviates Biodegradable Municipal Waste.
^(a) The range of tonnages at 0% to 3% growth rate range; ^(b) 0% growth rate; and, ^(c) 0% to 5% growth rate range.

The UK Government and the devolved national authorities of Scotland, Wales and Northern Ireland have also introduced targets for recycling, recovery and diversion from landfill for various materials and waste streams in order to ratify the requirements of the

EU Directives. All of these targets will require increases in the quantities of material collected for recovery and recycling, which are shown below in Table 2.

Legislation/ policy	Waste recovery/recycling	Baseline year	Target date	Additional tonnage recovery/ recycling (000 tonnes)
Waste Strategy 2000 (England)	Household waste recycling/composting ^(a)	2000/01	2005	3,465 - 4,253
			2010	4,720 - 7,016
			2015	5,474 - 9,721
	Municipal waste recovery ^(a)	2000/01	2005	5,199 - 6,612
			2010	6,606 - 10,468
	C&I waste recovery ^(a)	1998/99	2005	12,800 - 22,470
Wise about Waste: The National Waste Strategy for Wales	Municipal waste recycling/composting ^(a)	2000/01	2003/04	4,823 - 18,166
			2006/07	131 - 154
			2009/10	296 - 375
	C&I waste recovery ^(a)	1998/99	2005	365 - 1,554
			2010	486 - 2,840
	C&I biodegradable waste recovery ^(a)	1998/99	2005	147 - 429
			2010	197 - 753
Scottish National Waste Strategy	Municipal waste recycling/composting ^(a)	2001/02	2006	524 - 618
	BMW recovery ^(a)	2001/02	2006	113 - 337
N. Ireland Waste Management Strategy	Household waste recovery & recycling ^(a)	1999/00	2005	70 - 90
			2010	153 - 224
	C&I waste recovery ^(a)	1999/00	2005	33 - 99

Table 2: A summary of future recovery/recycling waste targets in the UK.

Notes: BMW abbreviates Biodegradable Municipal Waste.

^(a) The range of tonnages at 0% to 3% growth rate range; ^(b) 0% growth rate; and, ^(c) 0% to 5% growth rate range.

Table 3 below, attempts to provide some order of magnitude on the totality of the task for the waste industry and its stakeholders. It is appreciated that these targets are not entirely comparable, and in some cases they are complimentary. The additional tonnages all assume 0% growth rates, which given recent historical trends in waste growth rates, is extremely unlikely.

Target source	Baseline diverted/ recovered (million tonnes)	Baseline Year	Additional diverted/ recovered tonnage required (million tonnes)	% Increase
Landfill	1.20	1995	7.07 ^(a)	589
Tyres	0.28	2000	0.22 ^(b)	79
WEEE	0.45	1998	0.23 ^(b)	51
ELV	1.70	2000	0.09 ^(b)	5
Packaging	4.46 ^(c)	2001	1.33 ^(d)	30
England targets:				
Municipal Recovery	6.06	2000/01	5.20 ^(e)	86
C&I diversion	36.61	1998/99	4.82 ^(e)	13

Table 3: Indication of future target requirements at 0% growth in waste arisings, with targets specifically for England under the Waste Strategy 2000.

Notes: ^(a) By 2010; ^(b) By 2006; ^(c) Recovery; ^(d) By 2008; ^(e) By 2005.

The most notable figure from Table 3 is the 589% increase in diversion of BMW from landfill. Under an annual waste growth rate of 3% (which is nearer current trends), diversion would have to increase by approximately 1100%.

It must be considered in this context that recycling in particular, is concerned with the consumption of material rather than its production. Unless there are markets for recyclates, their production is an environmental disbenefit.

Individual waste material markets are complex in themselves. There are many and various different types of paper, plastic, metals, etc., each traded internationally and each with individual prices, which can change monthly, if not daily, with vacillation of international supply and demand.

In most collected forms, household waste is of relatively low value. Along with performance measures like quality, quantity, presentation and availability, the typical length of LA waste contracts does not fit well with market volatility. This is generally why, commercially, the preferred source of recyclable material is from C&I sources.

The collection, sorting, delivery and processing of millions of additional tonnes of different types of material presents a significant logistical task that will not be resolved without investment in infrastructure and vehicles. This investment decision is complicated, particularly in terms of the architecture of the supply chain.

What is certain is that the tonnage and miles travelled will increase significantly, as short journeys from waste origin to landfill sites are replaced with journeys from origin through the various stages of the supply chain to material reprocessors.