

PARTIAL REGULATORY IMPACT ASSESSMENT OF THE DRAFT STATUTORY INSTRUMENT TO IMPLEMENT THE WASTE FROM ELECTRICAL AND ELECTRONIC EQUIPMENT DIRECTIVE

Executive Summary

The Waste Electrical and Electronic Equipment (WEEE) Directive aims at prevention of WEEE and its reuse, recycling and recovery, so as to reduce the disposal of this type of waste. The Directive sets targets for the separate collection of WEEE, along with standards for treatment and targets for recycling and recovery.

The WEEE Directive is a wide-ranging and complex Directive. This makes it difficult to estimate the potential costs and benefits to the UK with any significant degree of certainty. This partial RIA provides indicative estimates of the additional costs of implementing the Directive in the UK.

One of the key variables in assessing the costs of the draft Statutory Instrument to implement the Directive in the UK is the amount of WEEE that will be separately collected. Four scenarios were developed to investigate how costs will vary given different assumptions about rates of separate collection. These four scenarios with the estimated total annual costs of implementing the Directive are shown in table i).

Table i) – Costs of implementing the draft Statutory Instrument under various scenarios

		Range of total annual costs (£m)
A	Separate collection increases to same rate as it has since the NVMP scheme in the Netherlands began	229 - 313
B	Separate collection increases by the same proportion as it has since the NVMP scheme in the Netherlands began	231 - 319
C	100% separate collection for large 'non-white' WEEE, 10% for small WEEE	291 - 400
D	100% separate collection for all WEEE	368 - 500

The physical processes of separate collection, treatment and recovery of household WEEE account for over 70% of these costs (typically 14%, 38% and 23% respectively). Financing business-to-business WEEE accounts for around 7% of the total. Of the other costs, registration of producers and collection facilities is about 6%, allocation of WEEE around 3% and the costs of information provision about 8%.

Using this 'bottom-up' approach for the UK, the cost estimates suggest a range of costs for WEEE in the UK under the Directive of between £229m and £500m. The costs per tonne range from £274 to £454. This compares to the European Commission's separate cost estimate of £205 to £374 per tonne on average for the fifteen European Union member States.

Scenarios A and B are most likely to reflect the amount of WEEE separately collected and therefore the costs are more likely to lie at the lower end of this range. Scenario D was developed to analyse the total potential costs to the UK; the likelihood of these separate collection rates being achieved in the short to medium term is small. The total cost range of scenarios A and B is £229m-£319m.

Purpose and intended effect of measure

The objective

1. The European Commission has identified Waste from Electrical and Electronic Equipment (WEEE) as a priority waste stream: it is growing faster than other forms of waste and it contains certain hazardous substances which, following disposal, can have a disproportionately negative impact on human health and the environment.
2. The WEEE Directive¹ aims at prevention of WEEE and its reuse, recycling and recovery, so as to reduce the disposal of this type of waste. The Directive also seeks to improve the environmental performance of all operators involved in the life cycle of electrical and electronic equipment (EEE), and particularly those involved with WEEE.
3. This partial Regulatory Impact Assessment (RIA) discusses the potential costs and benefits to UK businesses, charities and the voluntary sector of implementing the Directive in the UK, as defined in the draft Statutory Instrument². It looks at the total costs to the UK and brings together and builds on two previously published RIAs. The first, which was issued as part of Discussion Paper for the first consultation³, focussed primarily on the costs of collection, treatment and recovery. The second RIA, issued with the Consultation Paper⁴, looked at the different systems that could be set up to manage the process.

The background

4. The Directive states that by 13 August 2005, producers of EEE should provide for the financing of the collection, treatment, recovery, and environmentally sound disposal of WEEE from private households deposited at collection facilities. For products put on the market after 13 August 2005 ('new' WEEE), the Directive says that producers should be responsible for financing the waste relating to their own products. With respect to this, producers are required to provide a 'guarantee', which may take the form of participation in an appropriate scheme, recycling insurance, or a blocked bank account.
5. WEEE from products put on the market before 13 August 2005 ('historic waste') is to be financed proportionately by producers existing in the relevant market when the respective costs occur. For a transitional period of 8 to 10 years, producers are allowed to show consumers the costs incurred in the disposal of historic WEEE.
6. Therefore in implementing the Directive, the UK Government must ensure that a system is in place so that final holders can return WEEE free of charge. It

¹ Directive of the European Council and Parliament (2002/95/EC) of 27 January 2003

² Statutory Instruments, 2004 No., Environmental Protection – The Waste Electrical and Electronic Equipment (Producer Responsibility) Regulations 2004.

³ *Discussion Paper on the implementation of the WEEE and RoHS Directives*, 28 March 2003.

⁴ *Consultation Paper on the implementation of the WEEE and RoHS Directives*, 25/28 November 2003.

must also be able to demonstrate that this separately collected WEEE has been treated in accordance with the Directive and achieved the rates of recovery specified.

7. The WEEE Directive is the first producer responsibility legislation that makes explicit reference to producers being responsible for the waste from their own products ('own marque'). Any implementation route the UK Government follows for the WEEE Directive will thus need to allow producers to discharge their obligations by dealing with the waste from their own products. Producers who wish to follow this route would need to ensure there existed an adequate infrastructure for the separate collection, treatment and recovery⁵ of their WEEE. They would need to be willing and able to identify and capture their WEEE that is separately collected but unsorted by marque or label.

Risk assessment

8. Implementation of the WEEE Directive will lead to a reduction in the risks, both to human health and to the environment, associating with the current methods of disposal of WEEE. These benefits are discussed further in the benefits section.
9. The main risks involved in implementing the Directive in the UK impact across a range of issues. Implementation should promote innovative and cost-effective solutions to facilitate the achievement of environmental benefits at least cost to UK business. Implementation also needs to take account of social issues such as those dealt with by charities and the voluntary sector, and the UK Government's social exclusion agenda. It also needs to ensure that the UK minimises the risks of failing to transpose the Directive appropriately and the consequences that could follow from this.

Options

10. The UK Government has considered a range of options and has had wide-ranging discussions with stakeholders on the most appropriate method of implementing the Directive. The UK Government's second consultation on the WEEE Directive outlined its preferred approach to achieving the requirements of the Directive in the UK. This approach is one of a 'National Clearing House' (NCH) system. Alternative options to the NCH that have been investigated have included a scheme along the lines of the Dutch *NVMP* system, where one producer-funded organisation deals with all WEEE, and a tradable evidence notes system. These options were discussed in the RIA that accompanied the Consultation Paper of 25/28 November 2003.
11. The NCH would allocate WEEE arisings to obligated businesses (i.e. all producers as defined by the Directive) based on the market share of these businesses. Obligated businesses would then be responsible for the collection (from the designated collection facility), treatment, and recovery⁶ of the WEEE allocated to them.

⁵ Recovery relates to obtaining materials or energy from WEEE. This includes material re-use and material recycling as well as incineration with energy recovery.

⁶ And sound environmental disposal of the residual after recovery.

12. The NCH would need to have a register of all obligated businesses, i.e. all producers (as defined by the Directive) who place EEE on the UK. It would also need to have information on the market share of each producer in each category of products covered by the Directive. The NCH would also need to have contact with all designated collection facilities (DCFs). These could include Civic Amenity (CA) sites or collection points at larger retail parks. These DCFs would inform the NCH of their WEEE arisings and the NCH would arrange for an obligated producer/group of producers to collect this WEEE.
13. Producers could discharge their obligations individually by arranging for collection, treatment and recovery of specific volumes of WEEE allocated to them. Alternatively they could join together under ‘producer consortiums’, or discharge their obligations through joining compliance schemes.
14. There are various options for how the NCH could work in practice; the key issue is when and how WEEE is allocated to producers, or compliance schemes acting on their behalf:
 - a. WEEE could be allocated to producers once it arises at collection facilities (physical allocation); this could be done once a certain amount of WEEE is ready to be collected (eg when a container is full);
 - b. WEEE arising at a particular collection point could be allocated to a producer (site allocation)⁷, or;
 - c. An amount of WEEE could be allocated to a producer at the start of a period, with no physical allocation (pre-allocation). It would then be down to the producer to demonstrate that the WEEE allocated to them has been treated and recovered to the required standards.
15. It is also possible to have a system that is a variation on physical allocation, whereby a producer is allocated a series of pick-ups from a particular site. At the extreme this would be equivalent to site allocation, where the producer is allocated all the pick-ups from a particular site for a year.

Benefits

Economic

16. The primary benefits of the WEEE Directive are likely to be environmental, which are discussed below. Some of these benefits may lead to economic benefits, in terms of increases in productivity due to possible benefits to human health, but these are very difficult to quantify. Other wider macroeconomic effects of the Directive are very hard to predict and will be heavily dependent on the price elasticity of demand for EEE products. The European Commission’s Explanatory Memorandum⁸ on the WEEE Directive suggested that any macroeconomic effects would be relatively limited.

⁷ This could be all WEEE or streams of WEEE.

⁸ Commission of the European Union, *Proposal for a Directive of the European Parliament and of the Council on Waste Electrical and Electronic Equipment – Explanatory Memorandum*, 13.6.2000.

Environmental

17. The WEEE Directive will contribute to the Government's sustainable development objectives, and to its objectives on waste as set out in the various *Waste Strategies*.⁹ The benefits, which are discussed in detail in the partial RIA that accompanied the first consultation, include reductions in the amount of landfill, which is consistent with the Government's wider waste objectives and with the aims of the Landfill Directive. They will also include improvements to air quality and water quality, contributions to reductions in disamenity, contributions to resource productivity, and positive impacts in terms of raising awareness amongst businesses and consumers in relation to waste more generally.
18. In terms of landfill avoided, the WEEE Directive could lead to between 133,000 tonnes and 339,000 tonnes of landfill being avoided each year. These benefits represent the savings in resources used to landfill and the externalities from landfill reflected in the Landfill Tax. These benefits are estimated to be in the range of £2m to £13m in 2006¹⁰. However these estimates are indicative only given that they depend on future changes to gate fees and the landfill tax.

Table 1: Total WEEE Environmental Impact compared to current UK situation

Outputs/impacts	Unit	Current UK	WEEE directive	Current UK	WEEE Directive
Waste (hazardous)	Kg	3.96E+07	4.52E+07	100%	114%
Waste (total)	Kg	2.40E+08	1.53E+08	100%	64%
E Total Primary Energy	MJ	4.83E+09	2.85E+09	100%	59%
CML-Air Acidification	G eq. H+	8.73E+07	4.46E+07	100%	51%
CML-Eutrophication (water)	G eq. PO4	2.46E+06	3.37E+06	100%	137%
CVCH-Air	m3	1.26E+14	6.01E+13	100%	48%
CVCH-Water	Litre	1.30E+10	1.37E+10	100%	106%
EB(R*Y)-Depletion of non renewable resources	yr-1	2.83E+08	3.52E+06	100%	1%
IPCC-Greenhouse effect (direct, 20 years)	kg eq. CO2	4.39E+09	3.80E+08	100%	9%
WMO-Depletion of the ozone layer (high)	G eq. CFC-11	6.45E+08	2.33E+07	100%	4%

19. In 1999, the DTI commissioned Ecobalance UK to undertake an assessment of the potential costs and benefits pertaining to the 2nd draft of the WEEE Directive. In 2002, the DTI asked PriceWaterhouseCoopers (PWC) to update this report in the light of the Common Position text of the Directive. Table 1 below presents results for the total volume of WEEE considered in the PWC report.¹¹ The majority of the indicators show that the WEEE Directive is expected to have a significant positive impact on the environment compared to the environmental impacts from the current methods of disposal in the UK. The

⁹ *Waste Strategy 2000*, Part 1 and Part 2, Cm 4693-1, Cm 4693-2; *National Waste Strategy: Scotland*, ISBN 1-901322-13-2; *Northern Ireland Waste Management Strategy*, March 2000, ISBN 0-37-08386-X.

¹⁰ Calculated as an estimate of the range of gate fees in 2006 (where it is estimated that currently landfill costs in the UK range between £20 and £40 per tonne) plus the externality of the Landfill Tax in 2006 multiplied by the estimated ranges of tonnages avoided.

¹¹ This report is available at the DTI website - www.dti.gov.uk/sustainability/weee/index.htm

actual level of benefits achieved will depend on the eventual volume of WEEE separately collected via UK implementation of the Directive.

Social

20. Increased WEEE collection rates may lead to benefits in terms of social inclusion in two ways. Firstly, there is the potential for an increase in the reuse of WEEE. This could result in second-hand EEE being made available to lower income groups. In addition there may also be opportunities for charities or voluntary organisations to provide training, for example for the long-term unemployed. Secondly, increased separate collection may lead to less fly-tipping of WEEE, which would result in improvements in terms of visual disamenity, particularly in areas that have experienced disproportionate levels of fly-tipping in the past. In addition separate collection of WEEE may have benefits in terms of increased awareness of waste in general.

Costs

Economic

21. Given the complexity and wide-ranging nature of the WEEE Directive there remains some uncertainty as to how many businesses will be affected, both directly and indirectly, by the requirements of the Directive. However, the range of business sectors likely to be affected will include:
- EEE Producers (Manufacturers) – including importers and exporters;
 - EEE Distributors (Retailers and wholesalers);
 - Repairers of EEE;
 - Dismantlers who deal with WEEE;
 - Secondary metal merchants who deal with WEEE;
 - Shredders who deal with WEEE;
 - Reprocessors who deal with materials from WEEE;
 - Landfill operators.
22. Using data from the SIC 92 index, over 100,000 businesses could be affected because they either manufacturer, import or export EEE, distribute EEE on a commercial basis, or deal with WEEE. In addition Charities and Voluntary Organisations who are involved with WEEE will also be affected.
23. The costs of implementing the Directive are considered for each part of the draft statutory instrument in turn.

Part III – Separate Collection

Enhancement of the collection infrastructure

24. An assessment of the capacity of CA sites to separate WEEE was carried out for Defra¹². This study concluded that the costs of upgrading all existing CA sites

¹² Network Recycling, *CA Site WEEE Capacity in the UK*, September 2003

in the UK to collect WEEE would be between £6m and £12m. This includes initial set-up costs, including containers, signage, extra staffing and training, but does not include ongoing staff costs after the first financial year, civil engineering costs or the provision of spare containers. It is not straightforward to convert this figure into a yearly cost, but if it assumed that the costs will be spread out over a three year period, the costs would be between £2m and £4m per year.

25. Initial estimates from the British Retail Consortium put the costs for setting up a new system for retailer in-store collection of WEEE to be around £500m. In their evidence to the Environment Food and Rural Affairs Select Committee, the equivalent figure was quoted to be around £100 million or £200 million¹³.
26. The draft Statutory Instrument allows for distributors to discharge their obligation by participation in a distributor's compliance scheme. The aim of distributor compliance schemes would be to provide systems of collection for final holders of WEEE, where it is just as easy to return WEEE as it would be through retailer take-back. One method that has been proposed is for compliance schemes to meet their obligations by contributing to the upgrading of existing collection points.
27. Retailers will therefore either be faced with the costs of upgrading the existing network to the standards required, or the costs of providing in-store take-back. It seems reasonable to assume that retailers will favour the least cost route; therefore the figure of £6m to £12m can be taken as an indication of the costs to retailers of meeting their obligations in the Directive.

Separate Collection

28. Data on both the arisings of WEEE and the amount of WEEE collected in the UK is generally rather sketchy. It is confined to two separate reports – ICER and E-SCOPE.¹⁴ Both the ICER and E-SCOPE figures suggest that the UK is currently exceeding the minimum separate collection target for household WEEE of 4kg per inhabitant, as required under the Directive.
29. The current UK situation for separate collection of household WEEE consists mainly of collection of large household appliances (white goods) by: Local Authorities as 'bulky waste' collected on demand; retailer take-back of old for new appliances during home delivery; delivery to Civic Amenity sites by final holders themselves; and collection by charities and voluntary organisations (VOs) following donation by the final holder or retailer.

¹³ Oral evidence given to the EFRA Committee by BRC, 17 November 2003
www.publications.parliament.uk/pa/cm200304/cmselect/cmenvfru/103/3111703.htm

¹⁴ Industry Council for Electronic Equipment Recycling (ICER), *UK Status Report on Waste from Electrical and Electronic Equipment*, 2000 and E-SCOPE, *Prospects for Household Appliances*, 2000.

30. These collection routes cater for virtually all large household white goods discarded (such as refrigerators, washing machines, and cookers), some brown goods (such as televisions) and some ICT (Information and Communications Technology) equipment (such as PCs). For Business-to-Business WEEE it is likely that the main collection routes are through business collection of old equipment on delivery of new equipment (via the manufacturer or a third party).
31. In implementing Article 5 of the Directive, the UK has a range of options for the separate collection of WEEE. The main options are:
- Kerbside collection by Local Authorities or a third-party (whether scheduled or on-demand);
 - Bring systems – return by the last holder to Civic Amenity sites and/or to separate bins at various locations; and
 - Retailer takeback either in-store or via alternative arrangements.
32. It is important in assessing the potential costs of the Directive to the UK to distinguish between the current total costs for the separate collection of WEEE and the additional costs of separate collection that are a consequence of the Directive itself.
33. Indicative estimates of the costs of collecting WEEE, derived from work undertaken by the DTI and PriceWaterhouseCoopers¹⁵, are given in table 2 below:

Table 2 – Indicative estimates of the costs of collecting WEEE.

	Total transport and site management costs (£/tonne) ¹⁶
1. Individual bring to CA site	£113
2. Kerbside collection on demand by local authority	£183
3. Scheduled kerbside collection	£156
4. Retailer collect on delivery	£172
5. In-store retailer take-back	£247
6. Collection by charities/commercial organisations	£80

(a) *White goods*

34. Estimates suggest that WEEE arisings are increasing by 3-5% per year across Europe.¹⁷ Based on 4% growth, and the ICER estimates, UK arisings of white goods in 2006 may be around 536,000 tonnes¹⁸. ICER estimates for 1998 suggest that some 12% of large household appliances that arose as waste were unaccounted for. The work by PWC and DTI estimates that 74% of large

¹⁵ PriceWaterhouseCoopers, *Environmental Life Cycle Assessment and Financial Life Cycle Analysis of the WEEE Directive and its implications for the UK*, February 2002

¹⁶ These figures do not include infrastructure costs and as they were estimated in 2002, have been adjusted to allow for inflation using the GDP deflator.

¹⁷ AEA Technology, *Recovery of Waste from Electrical and Electronic Equipment: Economic and Environmental Impacts, A report produced for European Commission DGXI*, July 1997.

¹⁸ Using the 1998 ICER estimate of 345,000 tonnes, and increasing this by 4 per cent per year;

household goods are collected by LAs through kerbside collection on-demand, 20% through retailer take-back and 6% by charities.

35. Based on these figures, the cost of the separate collection of 88% of these arisings, or 472,000 tonnes of large household appliances, in the UK in 2006 is estimated at around £82.4m per year. It is assumed in this partial RIA that the current collection routes for large household appliances will continue after the Directive is implemented because this infrastructure is in place and is well established.
36. Given that the Directive is likely to increase the awareness of WEEE amongst consumers we can assume that this unaccounted for tonnage is brought back into the waste stream following the introduction of the Directive. If this additional 12% of the WEEE (64,000 tonnes) were collected in the same manner as the current collection of large household appliances, this would lead to an additional separate collection cost of approximately £11.2m per year.

(b) Non-white goods

37. For WEEE other than large household appliances ('non-white goods'), current estimates suggest that a relatively small amount enters recycling processes. This implies that the vast majority of this type of waste is not separately collected. In 1998, ICER estimated that total arisings of WEEE other than white goods was 523,000 tonnes; only 102,745 tonnes (some 20%) were estimated as entering recycling processes.
38. Little information is available on how this type of WEEE, which is recycled, is separately collected. Based on information for large appliances we can assume that retailers collect 20% of 'non-white' WEEE as well (given that it includes such items as televisions). If we assume that charities collect the same proportion of 'non-white' as 'white' WEEE (6%), this leaves the remaining 74%. It is unlikely that Local Authority collection-on-demand is responsible for much of this WEEE. We therefore assume that it enters recycling processes by largely being delivered to civic amenity sites by final holders.
39. Assuming growth of WEEE of 4% per year, 'non-white' WEEE can be estimated to be 716,000 tonnes in 2006. Using the collection routes outlined above gives an estimate for the separate collection of almost 20% of this 'non-white' WEEE in 2006 of £17.2m.
40. To obtain the additional costs resulting from the Directive, this partial RIA considers four alternative scenarios for the growth in the separate collection of WEEE, two of which are based on the experience from the Netherlands following the introduction of the NVMP scheme.

Table 3 – Collection route scenarios

	Route 1	Route 2	Route 3
1. Individual bring to CA site	75%	-	19%
2. Kerbside collection on demand by local authority	-	-	-
3. Scheduled kerbside collection	-	75%	-

4. Retailer collect on delivery	19%	19%	19%
5. In-store retailer take-back	-	-	56%
6. Collection by charities/commercial organisations	6%	6%	6%

41. To analyse the potential variations in total costs, the DTI established with PWC three alternative collection routes for how the total ‘non-white’ WEEE could be separately collected once the Directive is implemented (see table 3). Under Route 1, the majority of collections would be through final users taking WEEE to the CA site. Under Route 2 the majority of collection are through schedule kerbside collection and under Route 3 the majority of collection are through retailer take-back.

Scenario A: UK separate collection increases to same rate as in NVMP

42. In the Netherlands, the NVMP scheme was established in 1998 to increase the collection and recycling of WEEE¹⁹. A separate scheme was also set-up to deal with ICT equipment. One estimate for the additional collection costs for ‘non-white’ WEEE in the UK can be obtained by assuming that the level of separate collection currently achieved in the Netherlands will also be achieved in the UK once the Directive is implemented. This would give separate collection rates of 20% for small households WEEE, 58% for brown goods and 55% for ICT equipment.
43. In total this would give an estimate for ‘non-white’ WEEE separately collected under the Directive of 259,000 tonnes in 2006 compared to the base case estimate of 141,000 tonnes in 2006 (based on current estimates of waste that enters recycling processes) - additional separate collection of 118,000 tonnes.
44. These alternative routes imply total annual costs for the separate collection of total ‘non-white’ WEEE under the Directive of:
- Route 1 (Civic Amenity sites): £31.6m;
 - Route 2 (kerbside collection): £40.1m and;
 - Route 3 (retailer in-store take-back): £51.0m.
45. These total costs imply additional costs for the separate collection of ‘non-white’ WEEE in the range of £14.4m to £33.8m in 2006.

Scenario B: UK separate collection increases by same proportion as in NVMP

46. Figures from the NVMP and ICT schemes suggest that from 1999 to 2000 percentage increase in separate collection for a range of WEEE arisings were as follows: ‘Small’ WEEE – 1000 per cent increase; Brown goods – 49 per cent increase; ICT equipment – 120 per cent increase²⁰.

¹⁹ www.nvmp.nl

²⁰ After the introduction of the Decree in Holland, the separate collection of small household WEEE (e.g. kettles, electric shavers) rose from 2 per cent to 20 per cent of arisings. Separate collection of brown goods rose from 39 per cent to 58 per cent. For ICT equipment, separate collection rose from 25 per cent to 55 per cent.

47. Using ICER estimates extrapolated to 2006 for arisings of different categories of WEEE and applying the Dutch experience to this gives the following estimates for increases in the separate collection of ‘non-white’ WEEE:
- Small household WEEE – estimates suggest that around 1% of these arisings enter recycling processes in the UK. Increasing this in line with Dutch experience would lead to 10 per cent separate collection in 2006 – an increase of 10,500 tonnes over the base case situation in 2006.
 - Brown goods – estimates suggest that some 4.5% of these arisings enter recycling processes in the UK. Increasing this in line with Dutch experience would lead to almost 7% separate collection in 2006 - an increase of 2,400 tonnes over the base case situation in 2006.
 - ICT equipment – estimates suggest that around 41% of ICT equipment enters recycling processes in the UK²¹. Increasing this by the Dutch experience would lead to 90% of ICT arisings being separate collected – an increase of 157,000 tonnes over the base case situation in 2006.
48. In total this would give an estimate for additional separate collection of ‘non-white’ WEEE of 170,000 tonnes. Using this figure and the three collection routes outlined above gives an estimate for the costs of separate collection for ‘non-white’ WEEE of:
- Route 1: £37.9m;
 - Route 2: £48.0m;
 - Route 3: £61.2m.
49. These total costs imply additional costs for the separate collection of ‘non-white’ WEEE in the range of £20.7m - £44.0m in 2006.

Scenario C: 100 per cent separate collection for large ‘non-white’ WEEE, 10 per cent for small WEEE²²

50. One of the aims of the Directive is to encourage the separate collection of WEEE so that is not disposed of with Municipal Solid Waste (MSW). One assumption is thus that all brown goods and all ICT equipment may be separately collected from MSW once the Directive is implemented. However, it is likely that the majority of small electrical items (such as electric shavers) may still be disposed of with MSW even after the Directive comes into force. An assumption that initially 10% of this type of WEEE is separately collected may not be unreasonable.
51. Using these figures gives an estimate for additional tonnes of ‘non-white’ WEEE that will be separated collected under the Directive in 2006 of 294,000 tonnes. Using this figure and the three collection routes outlined above gives an estimated for the costs of separate collection for ‘non-white’ WEEE of:
- Route 1: £53.0m;

²¹ This estimate excludes Local Area Network hardware (LAN).

²² Large WEEE is defined here as all WEEE that cannot be disposed of in dustbins, black bags and wheelie bins with MSW. It includes brown goods, such as TVs, and ICT equipment, such as PCs.

- Route 2: £67.2m;
 - Route 3: £85.6m.
52. These total costs imply additional costs for the separate collection of ‘non-white’ WEEE in the range of £35.8m to £68.4m in 2006.

Scenario D: 100 per cent separate collection for all WEEE

53. Based on extrapolation of estimates of current UK arisings this would mean that in 2006 all 1,252,000 tonnes of WEEE arising in the UK would need to be separately collected. Using this figure gives an estimate for additional tonnes of ‘non-white’ WEEE that will be separated collected under the Directive in 2006 of 400,000 tonnes. Based on the three collection routes outlined above gives an estimated for the costs of separate collection for ‘non-white’ WEEE of:
- Route 1: £65.9m;
 - Route 2: £83.6m and;
 - Route 3: £106.5m.
54. These total costs imply additional costs for the separate collection of ‘non-white’ WEEE in the range of £48.7m to £89.2m in 2006.

Total goods

55. Therefore the DTI’s current best estimate is that the introduction of the Directive will lead to a range of additional costs, per year from 2006, for the separate collection of WEEE in the region of:
- £11.2 m for white goods, plus *one* of the following scenarios:
 - £14.4m - £33.8m for non-white goods under Scenario A; or
 - £20.7m - £44.0m for non-white goods under Scenario B; or
 - £35.8m - £68.4m for non-white goods under Scenario C; or
 - £48.7m - £89.2m for non-white goods under Scenario D.
56. Therefore the overall estimate for separate collection of WEEE is in the range of £25.6m to £100.4m per year.

Part IV – Producer’s Obligations

Treatment

57. Information from industry suggests that very little WEEE in the UK is treated at present, with the general exception of fridges and freezers, which are treated in accordance with the separate ODS (Ozone Depleting Substances) Regulations²³.
58. Labour costs are likely to provide the majority of the cost element for treating WEEE given that draining and dismantling WEEE and separating components

²³ Treatment requirements under ODS regulations are considered as cost of those regulations and not of the WEEE Directive.

will largely be a manual exercise. These costs are likely to vary considerably between different EEE products. It is possible that through learning these costs could fall over time.

59. One industry estimate is that currently it would cost between £250 and £300 to dismantle and treat one tonne of PCs to the requirements of the Directive. Based on average weight estimates of 20 kg for a PC this is equivalent to a current cost estimate of £5 to £6 to dismantle an individual PC²⁴. ICER estimates are that, excluding Local Area Networks (LANs), 30 per cent of ICT equipment discarded by weight is PCs. Of the remaining ICT, estimates for the average weight of this are that it weighs at least twice that of a PC. We assume that it takes half the time to dismantle this equipment as a PC, given that most PCs have CRTs (Cathode Ray Tubes).
60. For brown goods, ICER estimates that some 66% of arisings by weight are televisions. A TV weighs on average around 26 kg. It is likely that dismantling would take less time than a PC because PCs have more components than TVs. A figure of half the time for a PC may not be unreasonable. For white goods, a weighted average gives around 47 kg per appliance. We can assume that these take half the time to dismantle and treat as a PC (because they have no CRTs and little glass in general). For small household appliances, estimates from ICER suggest that the average weight of this equipment is around 2kg. We can assume that given their size these items take on average one-quarter of the time taken to dismantle and treat a PC.
61. The above figures enable us to estimate the costs of dismantling and treating WEEE under our four different scenarios.

Scenario A: UK separate collection increases to same rate as in NVMP

62. Under this scenario the following tonnes of WEEE are assumed to be separately collected in 2006:
 - 536,500 tonnes of white goods;
 - 57,000 tonnes of brown goods;
 - 23,500 tonnes of small households goods;
 - 178,500 tonnes of ICT equipment.
63. Based on these figures the following cost estimates for dismantling and treatment can be obtained:
 - *ICT equipment:* 30% of this discarded by weight is PCs. This gives a weight of 53,500 tonnes, which is equivalent to approximately 2.7 m units of PCs. Industry estimates are that 20 % of PCs are refurbished. If the remaining 80% are recycled under the Directive, multiplying this figure by the cost of the time taken to dismantle and treat a PC, gives a cost of £12.8m to £15.3m in 2006. The remaining ICT is 125,000 tonnes. Assuming that the average

²⁴ This is approximately equivalent to 20 to 25 minutes of labour based on estimates of current average labour costs – estimated as average wages plus 30 per cent of average wages to reflect non-wage costs..

weight for this ICT is 50 kg, this gives 2.5 million units. If we assume that these units take as half as long to dismantle as a PC, total costs will be in the range of £7.5m to £8.9m in 2006.

- *Brown goods*: 66% of waste arisings by weight are estimated to be televisions. This gives around 1.45 million units. If it takes on average twelve minutes to dismantle and treat a TV, the costs will be in the range of £3.3m to £3.9m in 2006. The remaining brown goods represent 19,400 tonnes. This gives 3.9 million units. If we assume these units take half the time of a PC to dismantle and treat then these costs will be £11.6m to £13.9m in 2006.
- *White goods*: refrigerators and freezers represent 30% of white goods arisings by weight. In 2006 this will be equivalent to 161,000 tonnes. Given a weighted average of 42 kg per unit, this gives 3.9 million units of which 2.8 million will be refrigerators²⁵. Excluding fridges and freezers gives 376,000 tonnes, at a weighted average of 50 kg gives 7.5 million units. If we assume it takes half the time to dismantle and treat these as a PC (because they have no CRTs and relatively little glass in general), costs will range from £22.4m to £26.9m in 2006.
- *Small households goods*: the average weight of these goods is estimated to be around 2kg. For the estimated 23,500 tonnes, this gives 11.8 million units. If we assume it takes one-quarter the time to dismantle and treat these as a PC, costs will be in the range of £11.7m to £14.0m in 2006.

64. The above leads to an estimate for the costs of dismantling and treating WEEE under scenario A in the range of £104m to £118m in 2006.

Scenario B: UK separate collection increases by same proportion as in NVMP

65. Under this scenario and based on the same methodology as for scenario A, estimates for the costs of dismantling and treating WEEE under scenario B are in the range of £98m to £110.7m in 2006.

Scenario C: 100 per cent separate collection for large 'non-white' WEEE, 10 per cent for small WEEE

66. Under this scenario and based on the same methodology as for scenario A, estimates for the costs of dismantling and treating WEEE under scenario C are in the range of £125.6m to £143.7m in 2006.

Scenario D: 100 per cent separate collection for all WEEE

²⁵ If removing the hydrocarbons and hydrofluorocarbons from these fridges and freezers required under the Directive cost the same as the recent ODS regulation for CFCs this would cost around £35 m per year.

67. Under this scenario and based on the same methodology as for scenario A, estimates for the costs of dismantling and treating WEEE under scenario C are in the range of £178m to £206.9m in 2006.
68. In total then, the costs for treating WEEE in accordance with the requirements of the Directive are estimated to be in the range of £98m to £206.9m from 2006.

Part V – Registration

69. Producers will be required to register with the NCH when they place EEE on the market, with details of how their WEEE will be treated and recovered. Under the Packaging Regulations, producers are obliged to register with relevant environment agencies; the fees are £768 for individual registrations with a fee structure for group registrations²⁶ (for example a holding company with 22 subsidiaries would pay a total of £3018).
70. The Agency's role is to register the companies, carry out compliance monitoring on producers, accredit packaging waste reprocessors and exporters and enforce against 'free riders'. The registration fee is designed to fund these activities.
71. A similar funding structure could apply for registration of EEE producers under the WEEE regulations. The total costs of registration would then depend on how many EEE producers decide to discharge their obligations through a compliance organisation. The minimum costs would be incurred if all the producers chose to join a compliance organisation.
72. The DTI's partial RIA published for the Common Position text of the Directive said that some 25,350 producers may be affected by the Directive in the UK, though there remains much uncertainty surrounding this figure, not least because discussions are still taking place within Europe on the scope of the Directive.
73. The costs of registering these producers would therefore be £1.1m if all producers registered through one compliance organisation. The maximum costs would be £19.5m, if all EEE producers decided to register individually. It seems more likely that the costs of registration would be at the lower end of this range as there is a strong incentive for producers, and small producers in particular, to join compliance schemes.
74. An alternative scenario could be that 90% of EEE producers decide to join compliance schemes and the remainder register individually. In this case the costs of registering would be around £3.0m.

Part VI – Financing Waste Electrical and Electronic Equipment from Private Households

75. There are two main issues relating to the financing of household WEEE that will have an impact on the costs of implementing the Directive: allocation of WEEE, and the provision of a "guarantee".

²⁶ www.environment-agency.gov.uk/commondata/105385/2004wmp1_511591.pdf (page 5)

Allocation of WEEE - National Clearing House (NCH) System

76. The costs of an NCH system in Germany have been estimated at 1 eurocent per kg, which is equivalent to around £6.80 per tonne. Applying these figures to estimates of separately collected WEEE in the UK (796,000 tonnes to 1.25m tonnes²⁷), gives an estimate of the running costs of a NCH system in the UK in the range of £5.4m - £8.5m per year.
77. An alternative estimate from the SEWPF working group suggests that the annual budget for the NCH will be no more than £3m per year with the first year set-up costs adding another £1.5m for software design and development costs.
78. The costs of running the NCH will be dependent on the allocation method chosen. At one extreme, with physical allocation, the NCH will allocate a container of WEEE to a producer once it is full. This may mean that the NCH would allocate between 2.0 and 3.3 million pick-ups per year²⁸. This number would be reduced if producers were allocated a series of pick-ups from a particular site; for example if pick-ups were allocated in sets of 20, then there would be between 100,000 and 160,000 pick-ups per year.
79. For site allocation and pre-allocation, the NCH would allocate sites or amounts of WEEE at the start of the year. There would then be some form of balancing mechanism at the end of the year, to account for the amount of WEEE collected at individual sites in the case of site allocation or to account for the amount of WEEE separately collected in the case of pre-allocation. Physical allocations can be adjusted throughout the year and obligations would not need to be balanced to the same extent.
80. If individual pick-ups are not allocated by the NCH, they would either be picked up when they were full or there would be scheduled pick-ups from the site. If containers are picked up when they are full, the collection facility would call either the producer responsible (in the case of site allocation or where a producer is allocated a series of pick-ups) or the waste management company (in the case of pre-allocation). If the collection facility were calling the producer or the waste management company to ask them to pick up the WEEE containers, then the collection facility would make the same number of phone calls as they would to the NCH house with individual pick-ups.
81. Therefore some of the administrative costs incurred by the NCH, under individual pick-ups, would be incurred by collection facilities or producers in other systems with pick-ups on demand. The difference would be that calls would be made directly to the producers or the waste management company, cutting out the calls²⁹ made by the NCH. Under physical allocation, if the pick-ups are assigned in batches, these administrative costs would be reduced as the number of pick-ups per batch increased.

²⁷ The lower figure uses the estimate for non-white WEEE collected under scenario A. The upper figure assumes all WEEE is separately collected.

²⁸ Based on an average weight per container of 400kgs.

²⁹ “calls” are used for simplicity, other forms of communication such as e-mails may also be used.

82. With scheduled pick-ups, the same number of calls would not be needed. However producers or companies would still need to work out their schedule of pick-ups and adjust them in light of experience. To minimise the environmental impacts of the transportation related to collection, the containers should be as full as possible. With scheduled pick-ups, this would not necessarily be the case.
83. It is difficult to estimate how these different types of allocation would affect the costs of running the NCH. It is likely that the administration costs of operating a physical allocation system would be higher than either site allocation or pre-allocation. Site and pre-allocation are also likely to reduce the administrative burden on producer or compliance organisations. However a physical allocation system has the advantage of allowing WEEE allocations to be adjusted throughout the year so that total WEEE obligations can be met; site allocation and pre-allocation would require allocations to be adjusted at the end of a period with the associated costs.

Financial guarantee

84. For products put on the market after 13 August 2005 the Directive says that producers should be responsible for financing waste relating to their own products. With respect to this, producers are required to provide a ‘guarantee’, which may take the form of participation in an appropriate scheme, recycling insurance, or a blocked bank account.
85. The draft Statutory Instrument states that the guarantee of future treatment and recovery will be provided by participation in the NCH system. This means that by joining the NCH system, producers are agreeing to be responsible collectively for financing the waste relating to the products put on the market by the members of the NCH.
86. Should a producer wish to go ‘own marque’, they will be required to provide a ‘guarantee’ (which may take the form of participation in an appropriate scheme, recycling insurance, or a blocked bank account).
87. Under the assumption that few producers will decide to adopt an ‘own marque’ approach (at least initially), the additional costs of providing a financial guarantee for future WEEE arisings will be limited as the NCH system will act as the guarantee that WEEE (including orphan WEEE) will be treated and recovered in the future.

Part VII – Financing Waste Electrical and Electronic Equipment from Business Users

88. Article 9 of the Directive was amended to clarify provisions relating to the financing of historical WEEE from non-household sources (so called ‘business

to business WEEE')³⁰. A full RIA was carried out on this amendment to assess its impact³¹.

89. The amendment to Article 9 requires producers to offer free-take back, treatment and recovery of WEEE from other businesses only when they are supplying a new equivalent or similar product. For WEEE that is not being replaced the end-user is to be responsible for the end-of-life costs. The original Article 9 placed financial responsibility solely on the producer. The amendment therefore removed a potentially disproportionate burden on producers of EEE, particularly those with large market shares in the past.
90. The main benefits of amending Article 9 will accrue to producers of EEE who, following the amendment, will not have to make an accounting provision for all the EEE they put on the market in the past. These benefits will include the avoidance of negative impacts on company balance sheets and profit and loss accounts when the Directive is implemented in the UK. These impacts could affect a company's credit rating, or cause an unforeseen breach of loan covenants. A consequent negative and possibly misleading image to investors, shareholders and customers could follow and have adverse consequences for a number of businesses. In a worst-case scenario some businesses could find themselves technically insolvent.
91. The value of the potential liability that could be avoided by producers of EEE in all member states is estimated by the European Commission to be between 1 and 4 billion euro.³² The UK accounts for around one-sixth of total EU 15 Gross Domestic Product (GDP), and assuming the UK has as similar share of the European electronic and electrical equipment market, estimates of the value of the potential liability avoided in the UK could be between £110 million and £450 million.³³
92. The overall cost of financing the collection, treatment, re-use, recovery and recycling of historical waste from non-household sources is unlikely to change significantly from the level that will be incurred under the current wording of the Directive.
93. The European Commission estimates these costs to be in the range of €100-200 million per annum for the European Union member States. For the UK, assuming that the UK accounts for one-sixth of the EU15 market, it is estimated that costs of compliance with Article 9 will be between £11 million and £22 million per annum.

³⁰ The financial obligation of producers for the collection of equipment from *private* households applies from the collection point onwards.

³¹ www.dti.gov.uk/sustainability/weee/article9ria.pdf

³² *Proposal for a Directive of the European Parliament and of the Council amending Directive 2002/96/EC on waste electrical and electronic equipment*, Commission of the European Communities, COM (2003) 219 final.

³³ This calculation is based upon European Commission estimates which assume that EEE has an average lifetime of 10-20 years.

94. In terms of potential costs from the amendment of Article 9, the RIA recognised that there is potential for greater fly tipping, of WEEE, as end-users who are not replacing old equipment with new equipment will be financially responsible for their WEEE. However, fly-tipping is not expected to be large given that a significant amount of business to business EEE is traded as old for new, and because of the range of measures that the Government is planning to introduce to deal with fly-tipping more generally.

Part VIII – Recovery

95. Article 7 of the Directive says that by 31 December 2006 the recovery, re-use and recycling targets given in table 4 shall be achieved³⁴.

Table 4 – Recovery, re-use and recycling rates required by the Directive

Category of WEEE	Recovery	Material re-use and recycling
1	80%	75%
3 and 4	75%	65%
2,5,6,7,9 and 10	70%	50%
Gas discharge lamps	-	80%

96. Estimates of current recycling rates in the UK for a range of WEEE products suggest that these are significantly below most targets set out in the Directive. The 1999 Ecobalance report suggested that washing machines were recycled up to 52%, refrigerators up to 50%, personal computers (PCs) up to 24%, telephones up to 8%, whilst televisions and vacuum cleaners were hardly recycled at all³⁵.
97. Recent estimates from the shredding industry suggest recycling rates in the UK are currently 60% for refrigerators; 85% for washing machines; and 90% for cookers. It is assumed that the current recycling rates in the UK are achieved because it is economic to do so. Additional recycling is thus currently not cost-effective. Costs incurred in meeting the increased recovery targets of the Directive, over and above current practice, are thus likely to be additional costs of the Directive.
98. The DTI's current 'best' estimate for the costs of meeting the recovery targets set out in Article 7 are based on discussions with a range of industry representatives. The estimates are based on the information outlined in Table 5 below. This provides estimates for the material composition of different EEE equipment, the materials required to be recycled or recovered to meet the targets of the Directive, and estimates of the costs of recycling and recovering materials.
99. The material composition of different EEE products varies widely. Large household appliances have significant amounts of metals. Televisions and ITC

³⁴ The targets are minimum percentages by average weight per appliance. Re-use of whole appliances, which is given priority under the Directive, is not taken into account in calculation of the targets.

³⁵ Ecobalance UK, *Life Cycle Assessment and Life Cycle Financial Analysis of the Proposal for a Directive on Waste from Electrical and Electronic Equipment*, August 1999.

equipment are mostly made of non-metals. Industry estimates vary in terms of the material composition of EEE products, because different companies make products from different materials and because, over time, material composition changes. The figures in Table 5 are based on the estimates produced in the Ecobalance report and from those produced in the ICER report.

100. White goods (large household appliances) are currently separately collected and recycled due to their relatively high metal content. The metals they contain are mainly ferrous metals, i.e. iron and steel.
101. Non-ferrous metals include aluminium, copper, and the precious metals, gold, palladium, silver, and platinum. Non-ferrous metals are found in varying amounts in both white goods and some brown goods. Precious metals, in small amounts, are often found in ICT equipment.
102. The fact that a range of WEEE products are currently separately collected and recycled suggests that the recovery of ferrous and non-ferrous metals is economic. For precious metals it is likely that treating WEEE to obtain these metals is currently only economic up to a certain level given the small amounts of precious metals within an individual item and the time and effort required to obtain these metals.
103. Plastics are found in most types of EEE and are widely used in the casing and housing of products. Glass is also found in many EEE products, but is mainly used in cathode ray tubes (CRTs) in televisions and in monitors for ICT equipment.

Table 5 - Estimates of Material Composition and methods of disposal of EEE

	Material composition (%)				Current Estimated Costs of recycling/ recovery/ disposal per tonne
	White goods	Brown goods	ICT equipment	Small EEE	
Ferrous metals	60	18	30	20	£0
Non-ferrous metals	5	2	10		£0
Plastics	10-20	15-25	30	60	£300-£450
Glass	3	45-55	20		£300
Other	12-22	10	10	20	
Recovery targets of Article 7	80%	75%	75%	70%	
Materials assumed to be recycled to meet targets	65% metals; 10% plastics	20% metals; 45% plastics and/or glass	40% metals; 25% plastics and/or glass	20% metals; 30% plastics	
Energy recovery (incineration)	5%	10%	10%	20%	£50
Material sent to Landfill	20%	25%	25%	30%	£20-£40

104. Currently the vast majority of both plastics and glass from WEEE are either landfilled or incinerated, whether the WEEE enters a recycling process or not. Information from local councils suggests that the current costs of landfill in the UK ranges from £20 to £40 per tonne. Estimates for the incineration of municipal solid waste (MSW) are that a typical gate fee is around £30 per tonne.

Incineration of WEEE with energy recovery is likely to be more expensive than this. One estimate for this is £50 per tonne.

105. Industry estimates suggest that currently the recycling of plastics from WEEE costs in the range of £300 to £450 per tonne. This is made up of the separate costs of sorting, granulation, and compounding. An industry estimate for the current cost of recycling glass from WEEE is £300 per tonne. This is based on estimates for glass from computer monitors.
106. To meet the recovery target currently set out in the Common Position text of the Directive, the four scenarios for separate collection provide the following cost estimates.

Scenario A: UK separate collection increases to same rate as in NVMP

107. For white goods it is assumed that of the 536,500 tonnes separately collected in 2006, all the metals will be recycled as at present, and that this is economic. 10% of plastics are assumed to be recycled costing between £21m to £29.8m. 5% of material is assumed to be recovered at a cost of £1.5m. This gives a total cost estimate for meeting the recovery targets for white goods of £22.5m to £31.3m.
108. For brown goods, it is assumed that of the 57,000 tonnes separately collected in 2006 all metals are recycled as at present and that this is economic. 45% of plastics or glass are assumed to be recycled at a cost of £9.3m to £11.6m. 10% is assumed to be recovered at a cost of £0.3m. This gives a total cost estimate for meeting the recovery targets for brown goods in the range of £9.6m to £11.9m.
109. For ICT equipment, it is assumed that of the 178,500 tonnes separately collected in 2006 all metals are recycled as at present and that it is economic. 25% of plastics or glass are assumed to be recycled at a cost of £17.1m to £24.5m. 10% of material is recovered at a cost of £1m. This gives a total cost estimate for meeting the recovery targets for ICT equipment in the range of £18.1m to £25.5m.
110. For small household appliances, it is assumed that of the 23,500 tonnes separately collected in 2006 all metals are recycled as at present and that this is economic. 30% of plastics are assumed to be recycled at a cost of £2.6m to £3.6m. 20% of material is recovered at a cost of £0.2m. This gives a total cost for meeting the recovery targets for small household appliances of £2.8m to £3.8m.
111. These calculations give an estimate for the total costs of meeting the Directive's recovery targets for scenario A in the range of £51.4m to £71.1m per year.

Scenario B: UK separate collection increases by same proportion as in NVMP

112. Under this scenario and based on the same methodology as for Scenario A, estimates for the costs of meeting the Directive's recovery targets for Scenario B are in the range of £52.8m to £74.6m per year.

Scenario C: 100% separate collection for large 'non-white' WEEE, 10% for small WEEE

113. Under this scenario and based on the same methodology as for Scenario A, estimates for the costs of meeting the Directive's recovery targets for Scenario C are in the range of £70.8m to £97.7m per year.

Scenario D: 100% separate collection for all WEEE

114. Under this scenario and based on the same methodology as for Scenario A, estimates for the costs of meeting the Directive's recovery targets for Scenario D are in the range of £82.3m to £114m per year.

Part IX – Information

Provision of information for users

115. Article 10 of the Directive says that users of EEE in private households should be given information about the return and collection systems available to them, and their role in contributing to the re-use and recycling of WEEE. Producers and/or distributors should provide this information in the instructions for use or at point of sale.
116. Article 10 also says that from 13 August 2005, producers should appropriately mark EEE with a crossed-out wheeled bin symbol to discourage disposal in rubbish bins or similar means of municipal waste collection.
117. Such marking of EEE products does not take place currently. Thus the costs of this requirement are additional costs from the Directive. Cost estimates for Article 10 have been hard to come by. One industry estimate for the costs of producing a sticky label with the crossed-out wheelie bin symbol is that it would cost 5 pence per label. If this is applied to the 222 m units of EEE estimated by ICER as being sold in the UK each year³⁶ the total cost would be £11.1m per year.
118. One industry estimate for the cost of production of a plastic mould with the crossed-out wheelie bin sign is £5,000. Industry estimates are that there are some 200,000 variations of consumer electronic products on the market at any one time. In addition, industry estimates that the average life of an EEE product is 18 years. These estimates imply costs of £55.5m per year for plastic moulds for marking EEE products.³⁷

³⁶ This figure is for 1998 and applies to EEE products in the 10 categories of the WEEE Directive.

³⁷ £55.5 m per year is calculated as £5,000 multiplied by 200,000 product variants divided by 18 years.

119. If we assume that large products are marked via a plastic mould and small products are marked with a label then based on ICER figures for total sales of small electronic appliances (non-white goods), labelling these would cost £8m per year. Further, if we assume that of the 200,000 product variations, 20,000 of these are in large appliances³⁸ then producing moulds for these would cost £10 m per year. This gives an estimate for the total cost of marking products of around £18 m per year.³⁹

Information for treatment facilities

120. Article 11 of the Directive says that producers should provide information on different EEE components and materials, and the location of dangerous substances and preparations in EEE to treatment facilities to enable them to comply with the Directive. Such information is currently not required for WEEE in the UK. Thus the costs of this requirement are additional costs from the Directive. Cost estimates for Article 10 have been difficult to obtain but Article 17 of the Directive allows Member States the scope to transpose these information requirements by means of voluntary agreements.
121. The Directive does not require manuals to be produced for treatment facilities. An industry estimate is that if the information were provided via two-A4 page leaflets, each leaflet would cost £100 to produce. If all information were provided to treatment facilities in this way costs are estimated at some £6.6 m per year.⁴⁰
122. If information were provided electronically via a CD-ROM system annual costs are likely to be significantly lower. Whilst setting-up such a system for WEEE will entail investment costs, once established the running costs of such a system are likely to be relatively low. Electronic systems are the preferred option for businesses who will dismantle and treat WEEE once the Directive is implemented.

Provision of information to the European Commission

123. Article 12 of the Directive says that Member States shall provide information to the European Commission on the producers of EEE, quantities of EEE put on their market, and WEEE collected and re-used, and recycled and recovered by weight and, if this is not possible, by numbers. In addition, Article 12 requires Member States to send a report to the Commission on the implementation of the Directive at three-yearly intervals. It is difficult to estimate the costs at this stage as the process of data collection has not yet been finalised but these costs are not expected to be significant.

³⁸ Product variations are likely to be less wide ranging for large appliances than for smaller appliances.

³⁹ £8 m is calculated as 5p multiplied by 160,000 product sales per year. £10m is calculated as £5,000 multiplied by 20,000 product variations divided across 18 years (the average life of products as estimated by industry).

⁴⁰ £6.6 m is calculated as £100 multiplied by 200,000 product variations divided by 18 years for the average life of a product multiplied by 6 to reflect the industry estimate that every 3 years all product variations are changed.

Part X – Compliance Schemes

124. Should producers choose to join compliance schemes, there will be fixed administration costs of running these schemes; in addition to the fees that these compliance schemes will charge for all collection, treatment and recovery activities. An estimate of these costs can be obtained from the costs of joining a compliance scheme under the Packaging Regulations.
125. The main compliance schemes for packaging publish the fees they charge to obligated businesses to cover their operating costs. One compliance scheme charges its members a fixed fee of £250 per year plus a variable fee based on the size of their tonnage obligation.
126. Therefore if all of the 25,350 producers joined a compliance scheme, at a cost of £250 to cover fixed costs, the administration costs would be approximately £6.3m.
127. The administration costs of running a compliance scheme and the costs of registration are related: if all producers choose to join a compliance scheme the costs of registration will be minimised but the costs of administering the compliance schemes will be maximised. If all producers choose to register individually, the costs of registration will be maximised but the costs of administering compliance schemes will be zero. Therefore the range of costs for both activities will be £7.4m to £19.5m.

Environmental

128. The environmental costs of implementing the Directive relate to the environmental impacts associated with the separate collection and reprocessing of WEEE. At this stage it is very difficult to quantify these environmental impacts given the uncertainties about the size of the waste stream and the methods of collection.

Social

129. It is not anticipated that there will be any social costs of implementing the WEEE Directive, but we will continue to monitor this prior to implementation.

Equity and Fairness

130. The environmental benefits of the Directive are expected to fall broadly equally across different economic and social classes and across different geographical regions in the UK.

Consultation with small business: the Small Firms Impact Test

131. The Government's first two consultations on the WEEE Directive elicited over 550 responses. Few of these raised particular objections to the Government's proposals for implementing the WEEE Directive in relation to SMEs in the UK.

132. The WEEE Directive does not allow exemptions for SMEs from the obligations of the Directive. However, the Government is sensitive to the particular requirements of SMEs as they seek to discharge their obligations under the WEEE Directive in a cost-effective manner.

Competition Assessment

133. An assessment of the potential impacts on competition of various scenarios (an NVMP type system, tradable notes and the NCH) was carried out in the RIA that accompanied the last consultation paper. This competition assessment looks at the likely impacts on competition of the different methods of allocation on the various sectors involved.

EEE Producers

134. The Directive is a wide-ranging and complex Directive that does not enable a straightforward assessment of its potential implications for competition in the UK to be made. However, applying the Cabinet Office Regulatory Impact Unit's (RIU) Competition Filter suggests the following for all the different allocation methods:
- In terms of both producers and distributors of EEE there appears to be significant competition in the UK, particularly given the level of imports and the range of selling techniques;
 - The costs of the Directive will fall on producers and distributors in relation to the amount of goods they put on the market;
 - New firms are unlikely to be affected differently by the Directive compared to existing firms;
 - The market for EEE is characterised by rapid technological change;
 - The ability of firms to sell the type of products they want is unlikely to be significantly restricted by the Directive.

WEEE treatment facilities

135. There are few existing companies in this sector as WEEE is not currently treated to the levels required by the Directive. There are however some companies that carry out similar functions to those required by the Directive.
136. Competition in this sector will be dependent on access to WEEE and the ability of producers to compare the costs of the services offered by these organisations on an equal basis. It is difficult to predict how this sector will develop following implementation of the Directive, though it is possible to look at how the method of allocation may result in barriers to firms entering the market.

Compliance schemes

137. The nature of the costs faced by companies offering compliance services⁴¹ are likely to lend themselves to larger organisations. This may lead to a degree of concentration in the market for compliance organisations.
138. Whilst levels of market concentration are indicators of competition⁴² they do not necessarily in themselves mean that competition is insufficient. In the case of compliance organisations that are run by producers and funded by producers, there also have a clear incentive to recycle WEEE at least cost to their members.
139. The method of allocation may affect the market structure of the compliance organisations though the compliance organisation will be carrying out similar activities, irrespective of the method of allocation. In terms of the size of the compliance organisations, there may be similar issues as have already been discussed for WEEE treatment facilities.

Companies that recover materials or energy from WEEE

140. The method of allocation is unlikely to affect companies that recover materials or energy from WEEE, as they will source WEEE in a similar way. It is possible that some recycling companies will also offer treatment services, in which case they will be affected by the method of allocation in a similar way to WEEE treatment facilities.

Enforcement and Sanctions

141. It is proposed that the Statutory Instrument when made would be monitored and enforced by the relevant environment agencies in the UK. Offences under the Statutory Instrument when made will carry penalties as outlined in the draft Statutory Instrument.

Monitoring and Review

142. The draft Statutory Instrument when laid will be monitored by the relevant environment agencies and the DTI itself. This monitoring will feed into the evaluation of the effectiveness of the Statutory Instrument.

Consultation

143. This partial RIA builds on the partial RIA that formed part of the DTI's Discussion Paper published on 28 March 2003⁴³ and the partial RIA that accompanied the DTI's Consultation Paper on 28 November 2003⁴³. Respondents to these consultations provided few alternative estimates to those given in these assessments.

⁴¹ High fixed costs and relatively low marginal costs.

⁴² See *Guidelines for competition assessment: A guide for policy makers completing Regulatory Impact Assessments*, Office of Fair Trading, (OFT355), February 2002.

⁴³ www.dti.gov.uk/sustainability/weee

Summary and Recommendation

144. The WEEE Directive is a wide-ranging and complex Directive. This makes it difficult to estimate the potential costs and benefits to the UK with any significant degree of certainty. This partial RIA provides indicative estimates of the additional costs of implementing the Directive in the UK. One of the key variables in assessing the costs implementing the Directive in the UK is the amount of WEEE that will be separately collected. The following scenarios were developed to investigate how costs will vary given different assumptions about rates of separate collection:

- A - Separate collection increases to same rate as in NVMP
- B - Separate collection increases by same proportion as in NVMP
- C - 100% separate collection for large 'non-white' WEEE, 10% for small WEEE
- D - 100% separate collection for all WEEE

145. The costs under each of the Scenarios for the rates of growth of separate collection are given in Table 6 below:

Table 6 - Estimates of the annual costs of implementing the Directive (£million)

	Scenario			
	A	B	C	D
Enhancement of the collection infrastructure (initial costs)	2 - 4	2 - 4	2 - 4	2 - 4
Registration of Producers and Collection Facilities and administration of compliance schemes	7.4 - 19.5	7.4 - 19.5	7.4 - 19.5	7.4 - 19.5
Allocation of WEEE (NCH)	3.0 - 8.5	3.0 - 8.5	3.0 - 8.5	3.0 - 8.5
Separate Collection (Article 5)	25.6-45.0	31.9-55.2	47.0-79.6	59.9-100.4
Treatment (Article 6)	104 - 118	98 - 110.7	125.6 - 143.7	178 - 206.9
Recovery (Article 7)	51.4 - 71.1	52.8 - 74.6	70.8 - 97.7	82.3 - 114
Financing WEEE from users other than private households (Article 9)	11 - 22	11 - 22	11 - 22	11 - 22
Provision of information for users (Article 10)	18	18	18	18
Information for treatment facilities (Article 11)	6.6	6.6	6.6	6.6
Total costs per year	229.0 – 312.7	230.7 – 319.1	291.4 – 399.6	368.2 – 499.9

146. Using this 'bottom-up' approach for the UK, the cost estimates suggest a range of costs for WEEE in the UK under the Directive of between £229m and £500m. The costs per tonne range from £274 to £454. This compares to the European Commission's separate cost estimate of £205 to £374 per tonne on average for the fifteen European Union member States outlined in its Explanatory Memorandum to the Directive⁸.

147. Scenarios A and B are most likely to reflect the amount of WEEE separately collected and therefore the costs are more likely to lie at the lower end of this range. Scenario D was developed to analyse the total potential costs to the UK; the likelihood of these separate collection rates being achieved in the short to medium term is small. The total costs range of scenarios A and B is £229m-£319m.

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