

## The management of waste from electrical and electronic equipment (WEEE) in the European Union<sup>1</sup>

### *Managementul deșeurilor electrice și electronice (DEE) în Uniunea Europeană*

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#### **Abstract**

Worldwide, WEEE constitutes one of the fastest growing waste fractions generated, accounting for 8% of all municipal waste. This trend increases the environmental burdens consequently action on WEEE is an urgent need in nowadays. The paper outline the current status of the management of the WEEE across the European Union.

**Keywords:** waste from electrical and electronic equipment, WEEE Directive, the responsibility principle

#### **Rezumat**

La nivel mondial, deșeurile electrice și electronice înregistrează o creștere rapidă, reprezentând 8% din totalul deșeurilor municipale generate. Acest trend generează efecte negative asupra mediului, în consecință gestionarea corespunzătoare a deșeurilor electrice și electronice este o cerință urgentă. Lucrarea prezintă succint stadiul actual al gestionării deșeurilor electrice și electronice la nivelul Uniunii Europene.

**Cuvinte-cheie:** deșeuri electrice și electronice, Directiva privind deșeurile electrice și electronice, principiul responsabilității

**JEL Classification:** Q53, Q56

Urbanization and growing demand for consumer goods, have increased the consumption of electrical and electronic equipment. A broad range of goods is classified as electrical and electronic equipment, including large and small household appliances: computers, computer games and peripherals, mobile phones, video and audio equipment, electrical tools, portable electronic devices, and so on (Balakrishnan Ramesh Babu, Anand Kuber Parande and Chiya Ahmed Basha, 2007).

Once these products reach the end of their useful life, they become WEEE or waste from electrical and electronic equipment.

WEEE has been defined as any equipment that is dependent on electric currents or electromagnetic fields in order to work properly, including equipment for the generation, transfer, and measurement of current (Schafer, van Looy, Weingart, and Pretz, 2003).

Waste from electrical and electronic equipment is a rapidly growing waste stream in Europe. Significant amounts of WEEE have been consigned to landfill, taking up space and leaving behind environmentally damaging toxic substances.

In response to the increasing volumes of WEEE and their potential environmental impacts, the European Commission has developed legal instruments for waste from electrical and electronic equipment, one of this is: European Union’s Waste Electrical and Electronic Equipment (WEEE) Directive.

The directive seeks to contribute to the protection of human health and to the environmentally sound recovery and disposal of WEEE (Balakrishnan Ramesh Babu, Anand Kuber Parande and Chiya Ahmed Basha, 2007).

The implementation of the European Union’s Waste Electrical and Electronic Equipment (WEEE) Directive has resulted in 27 different pieces of legislation with varying definitions, obligations and agreements (Huisman, Magalini, and Kuehr, 2008).

For some EU Member States, the transposition of the Directive into National law, and the development of take-back schemes and recycling infrastructure were relatively easy, as already legislation and recycling infrastructure were present prior to the Directive.

In other Member States, in particular in Central and Eastern Europe, both legislation and infrastructure were less developed than in Western Europe.

Difficulties with the implementation arose as a result of the complexity of involving all relevant stakeholders actively and agreeing on responsibilities. These difficulties have contributed to delays in the legal transposition and practical implementation of the Directive (Sander, Schilling et al., 2007).

The 27 different transpositions and interpretations of the WEEE Directive are leading to high costs, disorder, delays and lost focus on the original environmental intent (Huisman, Magalini, and Kuehr, 2008).

In their national legal texts, Member States take a variety of approaches when allocating responsibility which are summarised in Table 1 (Sander, Schilling, et al., 2007).

The current situation regarding the physical and financial responsibility across the EU Member States is presented in Figure 1 and Figure 2 (Chris van Rossem, 2007)

The main concerns regarding the WEEE management in European Union Member States are related to the fact that (Chris van Rossem, 2007; Huisman, Magalini, and Kuehr, 2008; Sander, Schilling et al., 2007; Review of Directive 2002/96 on Waste Electrical and Electronic equipment, 2008):

- ◆ WEEE Directive is only transposed.
- ◆ Collective systems are the only ones operating, while individual systems are delayed and untested.
- ◆ There are: different reporting procedures and requirements, different registration procedures and requirements, differences in covered categories and offered services, different country models of WEEE directive level that increases costs and creates avoidance behaviour.
- ◆ Recovery targets not consistent with sales.

- ◆ There is little research available on why certain (national) collection schemes are more effective and efficient than others with regard to overall costs, achieved collection amounts and recycling percentages.
- ◆ The current target of 4 kg is for some Central and Eastern Member States (for example Romania) too ambitious, at least for the next few years.
- ◆ There is little attention to prevention, reuse and re-design in practice.

Increasing harmonization between Member States can improve compliance and avoid free-riding. Additionally, enforcement is essential to avoid free riding and illegal exports, low quality of treatment and to provide positive incentives for collection.

Table 1: Allocation of Responsibility for Collection of WEEE from private households in National Legal Text: EU 27

Member State	Physical Responsibility	Financial Responsibility
Austria	D/M/P	D/P
Belgium (Brussels)	D/M	D
Bulgaria	P	P
Cyprus	P	P
Czech R.	D/P	D/P
Denmark	M	M
Estonia	D/P	D/P
Finland	D/P	P
France	D/M/P	D/P
Germany	M	M
Greece	P	P
Hungary	P	P
Ireland	D/M	D/P
Italy	D/M	D/M
Latvia	P	P
Lithuania <sup>2</sup>	D/M/P	P
Luxembourg	D/M	D/M
Malta	D/P	D/P
Netherlands	D/M	D/M
Poland	D	D
Portugal	D/M/P	D/P
Romania	M	M
Slovakia	D/P	D/P
Slovenia	D/M	D/M
Spain	D/M	P
Sweden	P	P
UK	D/P	D/P

D = Distributor, M = Municipality, P = Producer (definition varies between national and European approach)

Allocation of Responsibility for Collection  
of WEEE from Private Households  
Physical Responsibilities

- D/M/P
- D/M
- D/P
- M
- P

D - Distributor  
M - Municipality  
P - Producer  
Definition of 'producer' varies  
between national and European  
approach

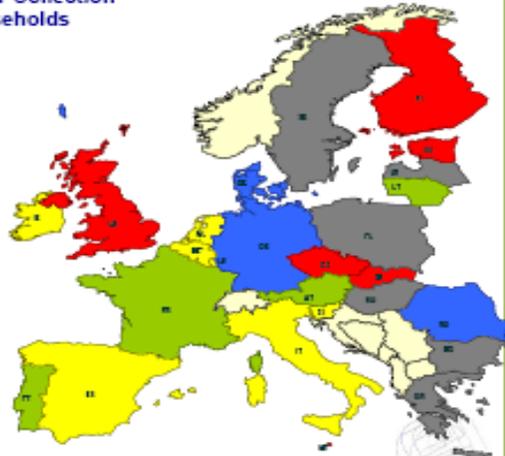


Figure 1. Allocation of Physical Responsibility for Collection of WEEE

Allocation of Responsibility for Collection  
of WEEE from Private Households  
Financial Responsibilities

- D
- D/M
- D/P
- M
- P

D - Distributor  
M - Municipality  
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Figure 2. Allocation of Financial Responsibility for Collection of WEEE

## References

- Balakrishnan Ramesh Babu, Anand Kuber Parande, Chiya Ahmed Basha (2007). Electrical and electronic waste: a global environmental problem, *Waste Management & Research*, .307-318
- Chris van Rossem (2007). *Implementation of WEEE Directive in the Europe Union: Some experiences to date*. Retrieved 20.02.2009 from: [http://www.iiiee.lu.se/site.nsf/wwwpages/CABCDF39A22F89B4C125737000316144/\\$File/02%20Chris%20EPR%20for%20WEEE%20in%20Europe.pdf](http://www.iiiee.lu.se/site.nsf/wwwpages/CABCDF39A22F89B4C125737000316144/$File/02%20Chris%20EPR%20for%20WEEE%20in%20Europe.pdf)
- EUROPA's Studies on WEEE, Site of European Commission: [http://ec.europa.eu/environment/waste/weee/studies\\_weee\\_en.htm](http://ec.europa.eu/environment/waste/weee/studies_weee_en.htm)
- Huisman J., Magalini, F., and Kuehr, R. (2008). *Where should WEEE change?* Retrieved 20.02.2009 from <http://files.step-initiative.org/download.php?sess=0&parent=232&expand=1&order=name&curview=0&id=930>.
- Review of Directive 2002/96 on Waste Electrical and Electronic equipment (2008), Final Report, Study No. 07010401/2006/442493/ETU/G4. Retrieved 20.02.2009 from [http://ec.europa.eu/environment/waste/pdf/weee\\_review.pdf](http://ec.europa.eu/environment/waste/pdf/weee_review.pdf)
- Sander K., Schilling S. et al. (2007). *The Producer Responsibility Principle of the WEEE Directive, Final Report*. Retrieved 20.02.2009 from [http://ec.europa.eu/environment/waste/weee/pdf/final\\_rep\\_okopol.pdf](http://ec.europa.eu/environment/waste/weee/pdf/final_rep_okopol.pdf)
- Schafer, T., van Looy, E., Weingart, A. & Pretz T. (2003). Automatic separation devices in mechanical recycling processes. In: *Proc. International Electronics Recycling Congress, 13–15 January*. Retrieved 20.02.2009 from <http://www.iar.rwth-aachen.de/www/upload/Publikationen/download/2003>

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