

# Waste without borders in the EU?

Transboundary shipments of waste

ISSN 1725-9177





# Waste without borders in the EU?

Transboundary shipments of waste

Cover design: EEA  
Cover photo © Stockxpert  
Left photo © Stockxpert  
Right photo © Stock.xchng  
Layout: EEA/Pia Schmidt

### **Legal notice**

The contents of this publication do not necessarily reflect the official opinions of the European Commission or other institutions of the European Communities. Neither the European Environment Agency nor any person or company acting on behalf of the Agency is responsible for the use that may be made of the information contained in this report.

### **Copyright notice**

© EEA, Copenhagen, 2009

Reproduction is authorised, provided the source is acknowledged, save where otherwise stated.

Information about the European Union is available on the Internet. It can be accessed through the Europa server ([www.europa.eu](http://www.europa.eu)).

Luxembourg: Office for Official Publications of the European Communities, 2009

ISBN 978-92-9167-986-7

ISSN 1725-9177

DOI 10.2800/14850



European Environment Agency  
Kongens Nytorv 6  
1050 Copenhagen K  
Denmark  
Tel.: +45 33 36 71 00  
Fax: +45 33 36 71 99  
Web: [eea.europa.eu](http://eea.europa.eu)  
Enquiries: [eea.europa.eu/enquiries](http://eea.europa.eu/enquiries)

# Contents

---

<b>Introduction .....</b>	<b>4</b>
<b>1 How are transboundary shipments of waste regulated? .....</b>	<b>6</b>
<b>2 The number of transboundary shipments of hazardous and problematic waste has increased significantly .....</b>	<b>8</b>
<b>3 The number of illegal shipments is also rising .....</b>	<b>11</b>
<b>4 Where does e-waste end up?.....</b>	<b>13</b>
<b>5 For non-hazardous waste, EU legislation and market forces go hand in hand.....</b>	<b>15</b>
<b>Conclusions .....</b>	<b>18</b>
<b>References .....</b>	<b>20</b>

# Introduction

'Exporters plead guilty to illegal waste shipment charges.'

'Three companies have been prosecuted for improperly sending household waste to the Far East.'

'Environmentalists criticise illegal waste tourism in EU Member States in Eastern Europe.'

**Source:** Toxic Trade News, 2007; Wien International, 2007.

Press reports of transboundary waste shipments usually focus on illegal activities similar to the ones presented above. The waste — often hazardous — has been exported to another EU country or to a developing country in order to avoid stricter treatment standards or to exploit low wages in the receiver country. But is this only the tip of the iceberg? The statistical data reported to the Commission by the Member States show a growing number of illegal shipments. However, it is not clear whether this is due to a real increase in illegal shipments or is due to better monitoring.

This report sets out what we do and do not know about transboundary shipments of waste. We present the international and EU legislation on waste shipment and information about the increasing quantities of shipped hazardous and problematic waste between EU Member States as well as shipments from EU Member States to other non-EU countries. We look at how the shipped waste is treated and whether the treatment is better in the importing countries than in the countries of origin and we also examine the illegal shipment of waste, including e-waste. We show that waste is a precious resource and that waste shipment regulations and market forces go hand in hand for certain waste streams, which is positive. In conclusion, we point out the need for better reporting to the European Commission

on waste shipments and why this should lead to better understanding of waste shipment issues (see Box 1).

For legal waste shipments, the latest data that is available for all EU countries covers the year 2005. From 1997 to 2005 the legal export of notified waste <sup>(1)</sup> (which includes mostly hazardous and problematic waste <sup>(2)</sup> from the EU Member States to other EU and non-EU countries) almost quadrupled. Apparently, the EU is increasingly acting like a single market in terms of hazardous and problematic waste treatment. In 2005 nearly 20 % of the waste shipped was for disposal while the remaining 80 % was shipped for recovery operations. But are these shipments a problem? Is waste treatment in the receiver country more environmentally friendly than it would have been in the country of origin? Or is the waste shipped to another country primarily because treatment prices are lower in the receiver country? Unfortunately, current reporting methods and consequent insufficient data do not allow us to answer these questions, or to ascertain whether the legislation is effective in terms of easing pressure on the environment.

This can be illustrated with the example of e-waste (called waste electrical and electronic equipment or WEEE, such as old computers, TV sets,

<sup>(1)</sup> Notification, a formal procedure, is the supply to competent authorities of details of waste shipments before they take place.

<sup>(2)</sup> Problematic wastes are those that have the potential to cause environmental damage but are not defined as hazardous by current regulations, for example mixtures of non-hazardous household waste and residues arising from its incineration.

refrigerators). The data reported by the Member States on transboundary shipments of waste reveal only little information about the fate of this waste generated in the EU, although this is a growing waste stream that contains many hazardous substances, for example, heavy metals. Analysis of trade statistics shows that many discarded TV sets are shipped to Africa — their low prices are an indicator that some shipments are likely to be e-waste. But the export of e-waste from the EU to African countries is prohibited, and NGOs report that disposal of this waste is damaging the environment and causing serious health problems for those employed in the disposal process.

However, we must bear in mind that while waste may be a potential hazard, it is also a resource that should not be wasted. A global market for (non-hazardous) waste materials has emerged — as shown by the increasing quantities of paper, plastic and metal waste shipped every year to Asia for recycling, although there are some signals that this trend has reversed in 2008 because of the recent economic downturn (ENDS Europe Daily, 2008).

The report is based on the analysis contained in a technical report prepared by the EEA's Topic Centre on Resource and Waste Management (ETC/RWM, 2008).

#### **Box 1 Content of this report**

- Regulations for transboundary waste shipment.
- Rising quantities of shipped hazardous and problematic waste, treatment of shipped waste and its consequences for the environment.
- Increase of illegal shipments.
- What we know about the fate of waste electrical and electronic equipment (e-waste).
- For non-hazardous waste, EU legislation and market forces go hand in hand.
- Conclusions — the need for better reporting of waste shipment data.

# 1 How are transboundary shipments of waste regulated?

---

Waste is a potential threat to human health and the environment if not handled correctly. At the same time, it can also be a resource that can reduce the use of virgin materials and generate energy.

Better waste management has been on the agenda in the EU, particularly in the old Member States, for the last 20 to 30 years. New waste strategies and legislation on the handling of waste have been introduced at both EU and national levels. In general, the requirements for waste management have been harmonised in the EU during this period, especially over the last 10 to 15 years.

This, together with the introduction of the single market in the EU in 1993, which stimulated transboundary shipments of goods, including waste, has prompted an increase in waste shipments between EU Member States for treatment and disposal.

The shipment of waste is regulated both at EU and international level (Box 2). These regulations are particularly concerned with hazardous waste.

There are four main principles in the EU approach to the shipment of waste:

- Waste for final disposal is normally considered to be a bigger environmental burden than waste for recovery, where waste is used as a resource. As a way to take responsibility for that burden, the EU's Waste Framework Directive states that the EU must be self-sufficient in waste disposal capacity. The Member States have to promote that aim individually: an inducement to establish a network of national landfills and other disposal installations;
- In principle, waste for disposal should also be disposed of in one of the nearest appropriate installations;
- Shipments of waste for recovery are subject to less restrictive regulation and in general these wastes can be shipped within the EU.

However, for hazardous waste or problematic waste as well as for any unlisted waste, special procedures must be followed;

- Export of hazardous waste for recovery from the EU to non-OECD countries is prohibited, since these countries usually do not have proper and sufficient treatment capacity.

Most of those principles also apply in EFTA countries (European Free Trade Association — Iceland, Norway, Switzerland and Liechtenstein). However, there are some additional provisions, for example regarding shipping waste for disposal from the EU to EFTA countries. Due to a general lack of data on waste shipment from EFTA countries, there is little information about these countries in this report.

In order to understand the full environmental and economic impacts of waste shipments, it is essential to know what categories of waste are shipped and where the waste is going.

At international level, transboundary shipments of waste are governed by the UN via the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. The aim of the Convention is to protect human health and the environment from adverse effects caused by wastes, especially hazardous wastes, and the transboundary shipments of these wastes. The Convention also covers proper management of these wastes. It underlines that transboundary shipments of hazardous wastes to developing countries, many of which are incapable of handling such waste, do not constitute environmentally sound management as required by the Convention. Export of hazardous wastes from OECD countries to non-OECD countries is specifically prohibited according to the export ban amendment to the Convention. The Convention is implemented by the EU via the Waste Shipment Regulation.



### Box 2 Important legislation on transboundary shipments of waste

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

- Waste classified as hazardous in the Convention or by the country of export, import or transit is subject to a prior notification to the authorities before transboundary shipment. Notification means that the exporter has to inform the competent authority about a planned shipment (for example type, amount, destination of the waste) and needs a written consent from the authority prior to the shipment.
- Export of hazardous waste from OECD countries to non-OECD countries is prohibited but requires further countries to ratify the export ban amendment to the Basel Convention to come into force globally.
- Every year each country has to submit a report to the Secretariat of the Basel Convention on the annual amounts of hazardous waste generated, imported and exported.

The EU Regulation on the supervision and control of shipments of waste within, into and out of the European Community (\*)

- Although the export ban amendment to the Basel Convention has not been enforced globally, in the EU, the export of hazardous waste to non-OECD countries is prohibited.
- Export of non-hazardous waste to non-OECD countries, for example paper waste, has to be notified to the authorities in advance according to what each of the non-OECD countries has arranged with the EU.
- It is, in principle, possible to ship all kinds of wastes within the EU whether the waste goes for disposal (for example landfilling) or recovery.
- For shipments for disposal within the EU, the Member States can implement a general or specific ban on import and export of waste.
- For shipments of hazardous and problematic waste for recovery within the EU, the Member States have more limited possibilities for objection.
- All wastes for disposal, and hazardous and problematic waste for recovery, have to be notified before the shipment. The notification requires very detailed information on the waste shipment. However, only data at very general level are reported to the European Commission.
- Some of the New Member States (for example, Latvia and Poland) have obtained derogation periods, which means that shipments from other EU countries to them must meet stricter criteria (in the case of some types of non-hazardous waste shipped for recovery), i.e. a notification procedure.

(\*) Until 12 July 2007 EU Regulation No 259/93, afterwards EU Regulation No 1013/2006. The latest regulation also incorporated the provisions included in the OECD Decision C(2001)107/Final on the Control of Transboundary Movements of Wastes Destined for Recovery Operations, that applies to OECD countries. There are some additional provisions in the EU Regulation 1013/2006 regarding waste shipment to EFTA and OECD countries that are not EU members.

## 2 The number of transboundary shipments of hazardous and problematic waste has increased significantly

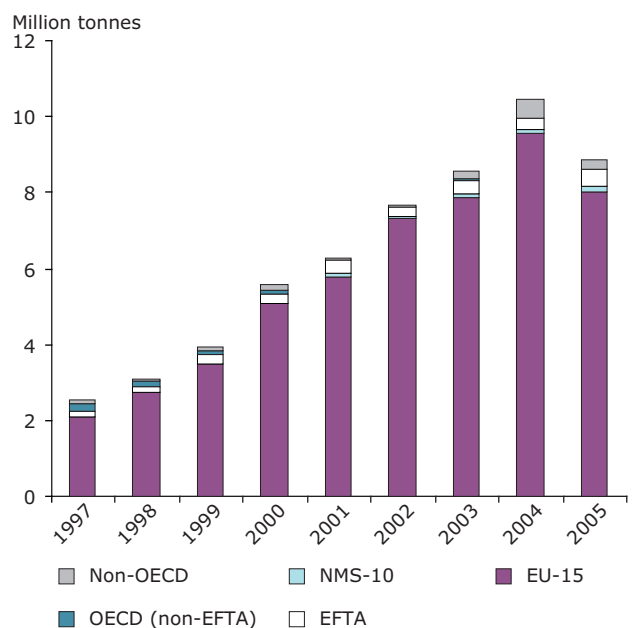
EU Member States must report shipments of notified waste (such as hazardous waste) to the European Commission and to the Basel Convention Secretariat; however, reporting is at an aggregated level. The following information is based on data reported to the European Commission.

Figure 1 clearly shows that the quantity of notified waste exported from the EU Member States is increasing. The notified waste mostly <sup>(3)</sup> comprises hazardous and problematic waste. From 1997 to 2005, shipped waste increased by almost a factor of four. The reduction in 2005 is largely due to reduced waste exports from the Netherlands <sup>(4)</sup>. The vast majority was shipped to other EU countries, a small part to other OECD countries and a limited amount (about 1–3 %) to non-OECD countries.

The import of notified waste also increased considerably by more than a factor four. In 2005, it was reported that 10.4 million tonnes of notified waste were imported into and within the EU-25. Similar to the exports, most imports of notified waste into EU-Member States (89 %) comprised shipments from other EU-countries, and around 11% was imported from other OECD countries. But whereas the exported amounts of notified waste to other OECD countries only increased slightly since 1997, the imports from other OECD countries into the EU-25 increased by a factor of five.

Levels of export and import of notified waste differs among the EU Member States. Figure 2 shows the export and import per capita in the EU countries and Norway. The most significant exporters are the Netherlands, Ireland, Luxembourg and Belgium followed by Denmark and Lithuania. Figures for import per capita are highest for Belgium, Germany and Norway followed by the Netherlands and

**Figure 1 Shipments of notified waste from EU Member States to other EU and non-EU countries, 1997–2005**



**Note:** Shipment of notified waste from the EU Member States relates to: old EU Member States (EU-15) <sup>(3)</sup>; new EU Member States (NMS-10); EFTA countries; other OECD countries; and non-OECD countries. Romania and Bulgaria are classified as non-OECD countries. The 1997 and 1998 figures do not include export out of NMS-10.

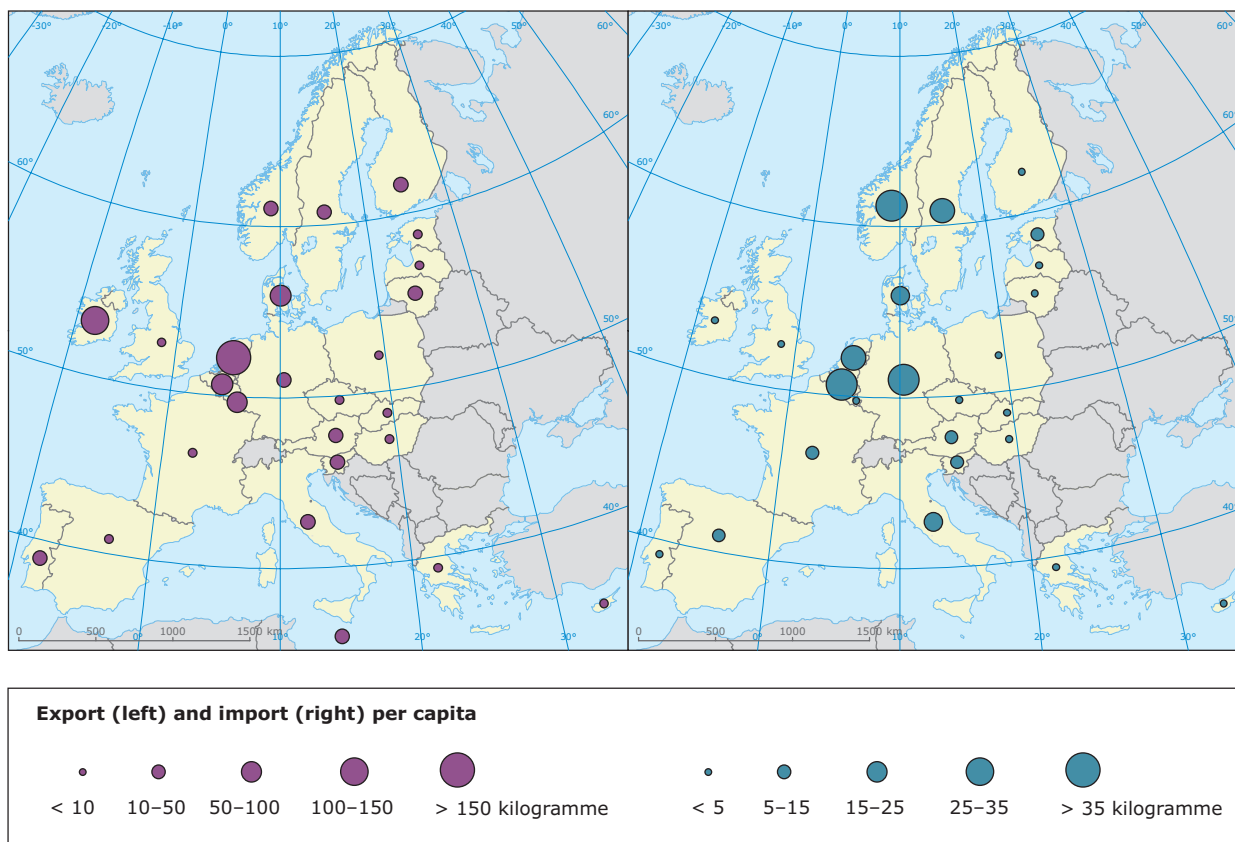
**Source:** European Commission, 2007; Secretariat of the Basel Convention, 2007.

Sweden. The map also shows that the new EU Member States have reported limited imports and exports per capita.

But are the rising shipments of waste between countries in Europe favourable or less favourable for

<sup>(3)</sup> This includes non-hazardous waste shipped to non-OECD countries that have a notification procedure in place.  
<sup>(4)</sup> The reduction mainly relates to household waste and waste incineration residues as well as unclassified waste from the Netherlands. One important factor for the change might be the enforcement of the landfill ban in Germany since Germany received considerable amounts of this type of waste from the Netherlands in 2004 and before, but not in 2005 any more.  
<sup>(5)</sup> EU-15 are the Member States that formed the EU before 2004: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom. EU-10 are the States that joined the EU in 2004: Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia. Together they are referred to as EU-25, whereas EU-27 includes Bulgaria and Romania, which joined the EU in 2007.

**Figure 2 Export and import per capita of notified waste in 2005 (kilo per capita)**



**Note:** 2001 figure is used for Malta.

**Source:** European Commission, 2007; Secretariat of the Basel Convention, 2007; Norwegian Pollution Control Authority, 2008.

the environment? Apparently, the EU is increasingly acting as a single market in relation to treatment of hazardous and problematic waste. These shipments can be driven by environmental, economic, technical or geographical factors (Box 3). In 2005, the EU generated 66 million tonnes of hazardous waste. In that year, the shipped amount of notified waste from EU countries to other EU countries and non-EU countries accounted for about 13 % of the total hazardous waste generation, compared to 5 % in 1997.

Figure 3 indicates how the shipped waste is managed. In 2005, nearly 20 % of the shipped

amounts were waste for disposal (mainly incineration, classified as D10 according to the EU Waste Framework Directive); the other 80 % was destined for recovery operations (mainly recycling and incineration with energy recovery). The increase in exports has been driven by a move towards incineration and recycling of organic and metal waste.

The political ambition of the EU to be self-sufficient in handling its landfill and other waste disposal activities has almost been achieved, as only a limited amount of waste is disposed of in other OECD

**Box 3 Driving forces for export and import of hazardous and problematic waste**

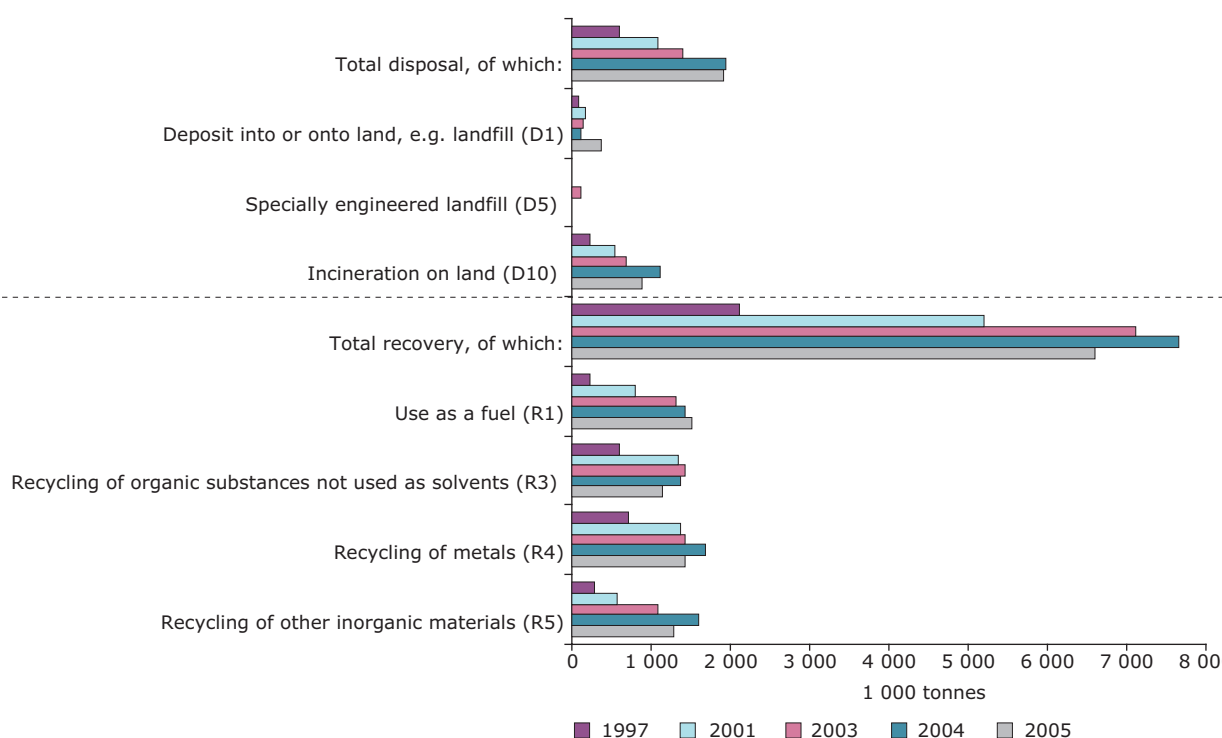
- Differences in prices for treatment and disposal.
- Countries with low or no national waste tax might receive waste from countries with higher waste tax.
- Insufficient waste treatment capacity.
- Need for special treatment technology.
- Large countries generally have more varied and highly developed treatment and disposal facilities.

countries. However, the ratio of waste shipped for disposal and waste shipped for recovery has remained constant throughout the investigated period. Hence, the aim described in the EU Waste Framework Directive, that individual Member States should individually move towards self-sufficiency in waste disposal, is no closer to being realised.

This is not necessarily a problem from an environmental point of view, as the disposal activity offered by other EU Member States might

take place at the same level of environmental protection as in the country of origin, or might even be more environmentally friendly (Box 4). However, as the type and treatment of notified waste reported to the European Commission is at a very aggregated level (see Box 8 page 19 for more information), it is not possible to evaluate if the waste shipments actually result in treatment that is better, at the same level or less favourable for the environment than if it had been treated in the country of origin.

**Figure 3 Treatment of notified waste shipped from EU Member States to other EU and non-EU countries**



**Note:** 1997 excludes Ireland, Italy and the new Member States that entered into the EU in 2004.

**Source:** European Commission, 2007; Secretariat of the Basel Convention, 2007. (The R and D codes indicated are the codes used in the Basel Convention and in the EU Waste Shipment Regulation).

**Box 4 Examples: is the shipped waste better treated?**

Is the shipping of hazardous and problematic waste between the Member States an indication that the waste receives better treatment in the importing Member State than in the state of origin?

For example, shipments from some of the new Member States to the EU-15 of old transformers containing PCBs are fully justified from an environmental perspective, as facilities for treatment of such waste in the countries of origin are inadequate.

On the other hand, organic solvent wastes are often incinerated. As the strict minimum rules for incineration included in the Directive 2000/76/EC are the same for all Member States, we can assume that economic factors are more important than environmental factors when decisions about waste shipping are made.

### 3 The number of illegal shipments is also rising

Whereas the environmental and economic impacts of legal waste shipments can be positive or negative, illegal shipments of waste clearly are a matter of concern for the environment as well as for the economy. However, scarcity of information means that illegal activities of any kind are difficult to analyse.

Illegal shipments of waste cause several problems:

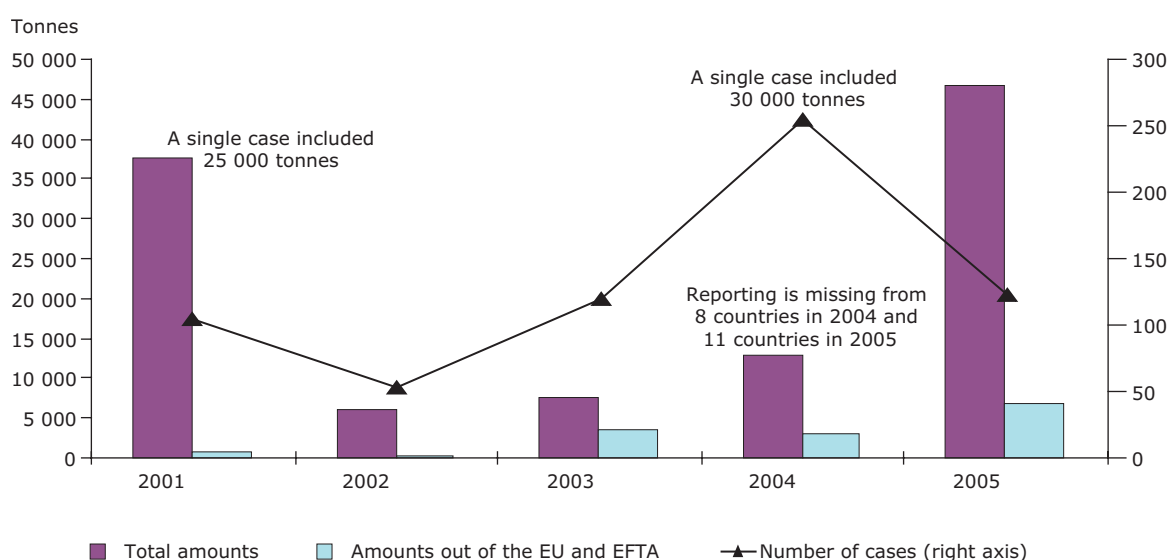
- The dumping of waste following an illegal shipment may have severe implications for the environment and human health, and the subsequent clean-up is an economic burden, especially for developing countries with inadequate waste facilities;
- Illegal shipments of waste have an adverse effect on trade and competition, putting law-abiding businesses at an economic disadvantage;
- Illegal shipments undermine international policy and enforcement efforts.

Instances of illegal shipments of waste must be reported to the European Commission every year by the Member States.

Reported annual illegal shipments vary between 6 000 and 47 000 tonnes with an average of about 22 000 tonnes; equivalent to 0.2 % of the notified waste (Figure 4). These are probably minimum figures, as many of the reports do not contain information on the amounts shipped. The number of reported illegal shipments has increased during the period 2001 to 2005. It is expected that reported cases represent a fraction of the actual number and that the number of illegal shipments is considerable.

Only a few of the cases reported to the European Commission concerned waste shipped from the old EU Member States (EU-15) to new EU Member States. However, information from the European Network on the Implementation and Enforcement

**Figure 4** Reported illegal waste shipments in the EU from 2001 to 2005



**Note:** In the years 2001 to 2003 the reporting covers only the old EU Member States, but three countries did not report.

**Source:** European Commission, 2007.

of Environmental Law (IMPEL) documents some cases (IMPEL, 2005).

Sufficient control and inspections of transboundary shipments of waste are important tools if the number of illegal shipments is to be reduced, especially when we consider that illegal shipment may take many forms (Box 5).

A detailed analysis of data for 2003 shows that two thirds of the illegal shipments were related to hazardous or problematic waste mainly within the EU. One third of these were related to non-hazardous waste and mainly consisted of waste to non-OECD countries for recovery.

### **Box 5    Illegal shipment may take many forms**

Illegal shipment is not simply a case of transporting a certain type of hazardous waste to a country where it is prohibited, but encompasses both the unintentional breach of law caused by, for example, an administrative error, or a carefully planned illegal shipment of waste. Examples of illegal shipment include:

- transporting any waste subject to the Basel Export Ban out of the EU or the OECD;
- transporting waste without notifying the authorities of source and destination when such a notification is necessary;
- falsifying any documentation regarding waste loads or not declaring waste on documentation;
- mixing certain types of waste;
- classifying hazardous waste as non-hazardous ('green-listed');
- shipping waste whilst falsely claiming that it comprises second-hand goods and is therefore not subject to waste regulations.

More examples can be found in article 2, paragraph 35 of the EU Regulation 1013/2006.

## 4 Where does e-waste end up?

As European citizens acquire more and more electrical and electronic goods and frequently exchange appliances for new ones, e-waste (waste electrical and electronic equipment, WEEE) is a rapidly growing waste stream. It requires special attention because it contains hazardous substances (for example, heavy metals) and at the same time valuable materials such as precious metals, which make it attractive as a resource. The EU Directive on waste electrical and electronic equipment (2002/96/EC) requires e-waste to be collected and imposes strict requirements on the treatment of this waste in the EU. But where does this waste actually end up? Is it actually recycled in the EU or shipped to other countries?

It is very difficult to follow transboundary shipments of e-waste within and out of the EU. These waste fractions are assigned ambiguous codes when reported to the Basel Convention and the European Commission. Furthermore, it can be difficult to discern when a used electrical or electronic item is waste or just second-hand. In general, export of e-waste to non-OECD countries is prohibited, whereas for example, the export of a used but fully functional television set to a non-OECD country is permitted.

There have been well-documented cases in the European media highlighting infringements of this ban. It has been found, for example, that significant numbers of the exported used television sets, computers, monitors and telephones to non-OECD countries are non-functioning and they should, therefore, be classified as e-waste. In general, non-OECD countries do not have sufficient treatment and disposal plants for e-waste, and much of it is dismantled and incinerated in open fires to recover metals. This practice is unsafe both for the environment and human health (see Box 6).

The inability to follow e-waste streams is a serious problem in the enforcement of the

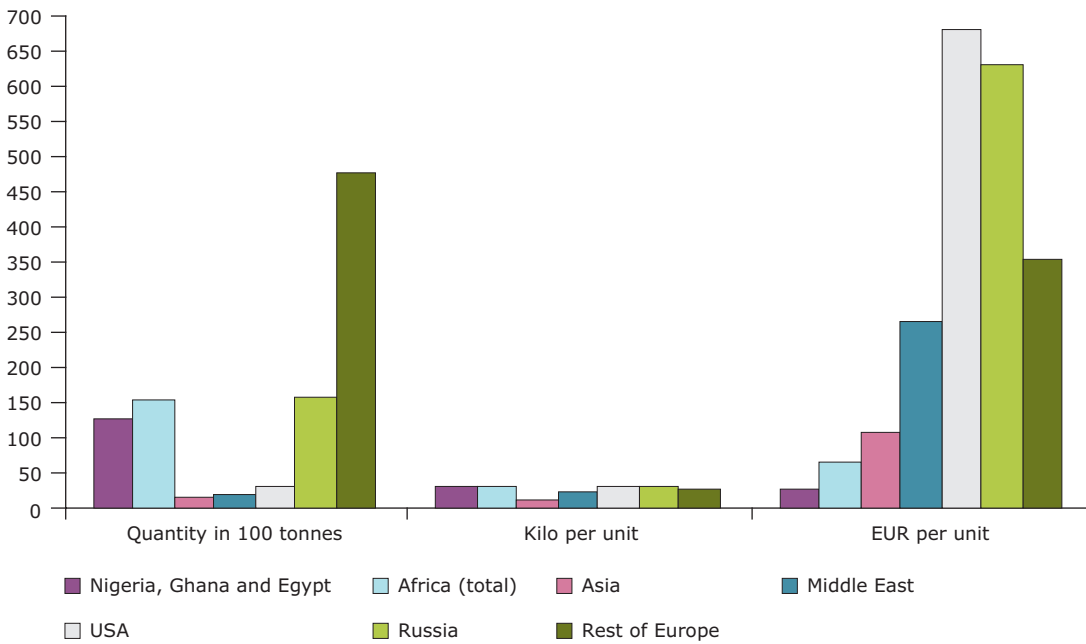
policy prohibiting export of certain hazardous waste types to non-OECD countries. In order to get an indication of exports of used electronic and electronic products and e-waste, EU trade statistics, which include amounts, units and values of the exports, have been analysed. The EU exported, for example, 3.6 million colour television sets in 2005 corresponding to 100 000 tonnes with an average value per unit of EUR 339 and average weight of 28 kilos per unit. By examining average price differences, we can make assumptions on whether those were functioning TV sets or were destined for scrapping.

Figure 5 shows the export of colour television sets and components from the EU to different parts of the world by amount, weight and price. Excluding Asia, the weight per exported unit is about the average, 28 kilos. However, the average value of exported colour television sets to Africa is very low (EUR 64). The figure is even lower (EUR 28) for Ghana, Nigeria and Egypt. In contrast, with the average value (EUR 339) this low value per unit indicates that a large number of the television sets exported to Africa are probably used products or maybe even e-waste.

In 2005, more than 15 000 tonnes of colour television sets were exported from the EU to African countries. This means that on average 35 tonnes, or more than 1 000 units of used television sets, arrive every day in either Ghana, Nigeria or Egypt. As these figures apply only to television sets, the total export of used computers, mobile phones, printers, CD players etc. — of which an unknown quantity may be waste — to these regions is expected to be significantly higher.

Knowledge of the final destination of a substantial part of used electrical and electronic equipment and e-waste is very limited.

**Figure 5** Export of all colour television sets from the EU to Africa, Asia, the Middle East, United States and other European countries in 2005



**Note:** Bulgaria and Romania are not included in the EU but in the 'Rest of Europe'.

**Source:** Eurostat, 2007.

**Box 6** How is e-waste treated in the developing countries?

According to NGO sources (Basel Action Network, 2002; Greenpeace, 2008), in developing countries, dismantling operations are often carried out with no or very little personal protection equipment or pollution control measures. In open burning of materials to recover metals, fly ash particulates laden with heavy metals and other toxic substances are usually emitted, resulting in increased human exposure, and contamination of food, soil and surface water. Materials of no use are then just dumped in an uncontrolled way, which may lead to further release of pollutants and damage to the environment.



## 5 For non-hazardous waste, EU legislation and market forces go hand in hand

In addition to the growing quantities of hazardous and problematic waste, the number of shipments of non-hazardous, or 'green-listed', waste such as paper, plastics and metals has also increased considerably in the last ten years, with a steep increase out of the EU to the Far East, particularly China. These wastes are resources and the Asian economy which was booming until 2008 needed them. Recent signals from some EU countries show, however, a reversal of this trend (ENDS Europe Daily, 2008).

Figure 6 shows that the total amounts of shipped non-hazardous waste have increased in the EU in the period from 1995 to 2007. The amounts exported to Asia have increased by a factor of ten for waste paper, a factor of eleven for plastics and a factor of five for metals. Shipped waste has also increased within the EU, but at much lower level. Overall, in 2007 the EU shipped more plastic waste to the Asian market than within the EU. For waste paper the amounts were equal, while the quantity of waste metals shipped within the EU remained greater than that shipped to Asia.

In the last 10 to 15 years the EU has passed several Directives that require Member States to recycle a certain minimum percentage of different waste types (Box 7), which implies that increasing quantities of waste have to be recycled. This actively provides an incentive for transboundary

shipments, since recycling requires either a specific technology or a critical quantity of waste to make recycling profitable. In addition, recycling requires activities where the waste material can be used as a production input.

The EU requirements for specific recycling rates have led to increasing amounts of recyclable waste materials on the market. For example, the amount of paper and cardboard packaging waste recycled has increased from about 24 to 30 million tonnes in the period from 1997 to 2005. The amount of plastic packaging recycled has increased from about 10 to 14 million tonnes in the same period.

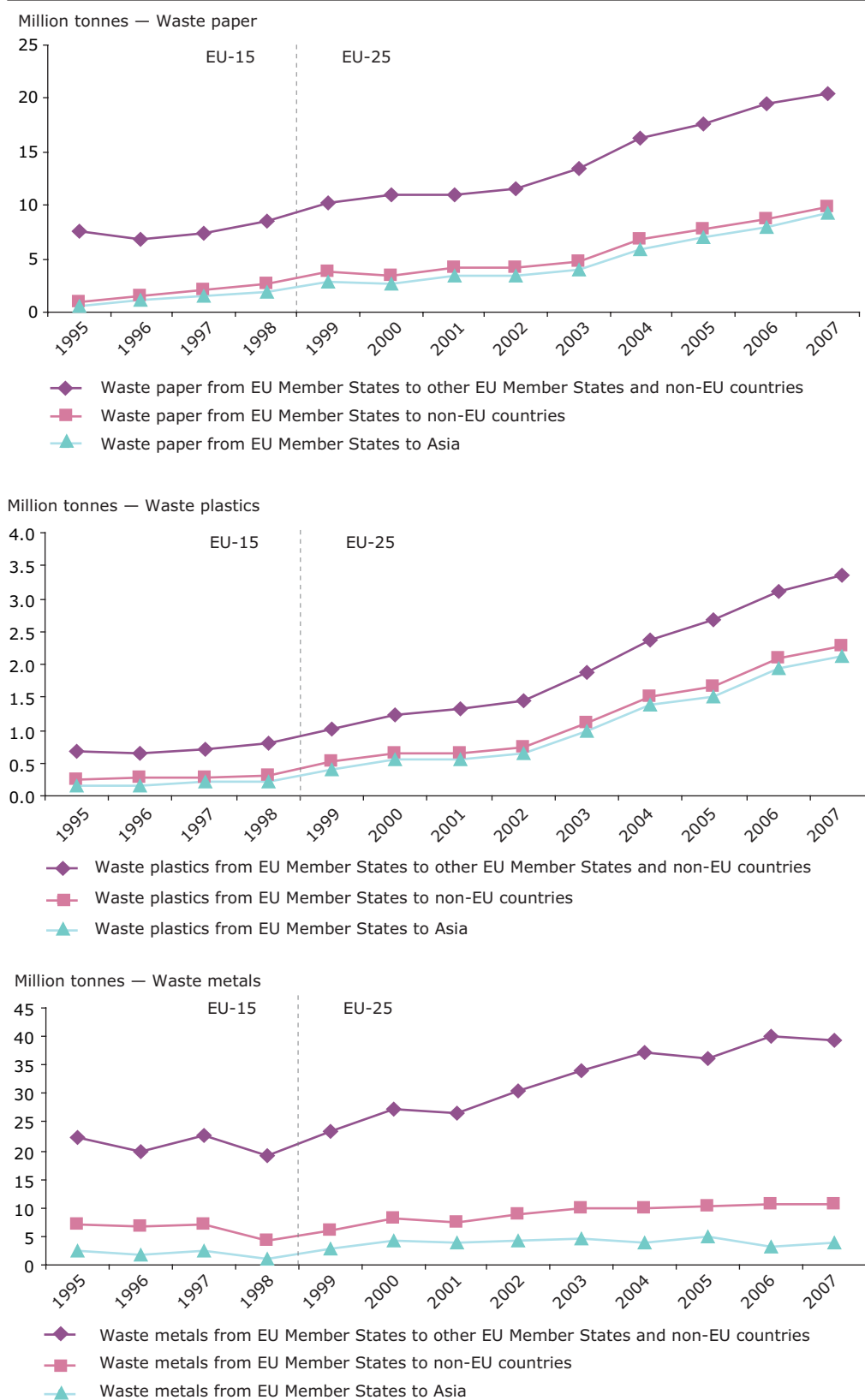
The legislative requirements in the EU for increased recycling rates are supported by economic forces. For more than a decade the prices of raw materials have been very high or increasing, which in turn affects the price of secondary raw materials reclaimed through recycling. Until 2008, the booming Asian economy in particular had a growing demand for virgin and secondary materials, and thereby contributed to increased prices. This coupling of legislation and market forces is not seen very often in waste management.

Generally speaking, it is environmentally beneficial that recyclable wastes are used instead of virgin materials. For example, the production of a kilogramme of new paper based on recyclable

### **Box 7 Drivers for increasing transboundary shipments of waste paper and cardboard, plastics and metals**

- Important legislative requirements in the EU for increased recycling: the Packaging and Packaging Waste Directive from 1994, the Directive on End-of-life vehicles (ELV) from 2000 and the Directive on Waste Electrical and Electronic Equipment (WEEE) from 2002.
- Until 2008, increasing demand from Asian economies meant increasing prices were being paid for the secondary raw materials (defined here as waste intended for recycling).
- Low transport costs by ship from Europe to Asia. Many ships transport goods from Asia to Europe. Lower demand for cargo space on the return journey allows them to offer cheap freight rates.

**Figure 6** Developments in shipments of waste paper, waste plastics and waste metals out of and within the EU from 1995 to 2007



**Note:** The area between the purple line (top) and the pink line (middle) indicates the amount shipped within the EU. The figures until 1999 cover only the EU-15 countries and from 1999 Bulgaria and Romania are not included.

**Source:** Eurostat 2007.

paper requires half the amount of energy needed for production based on virgin materials using a life-cycle approach. For aluminium the factor is even lower, since production of aluminium based on recyclable aluminium can use as little as 5 % of the energy needed for production based on virgin materials. And lower energy consumption generally means lower CO<sub>2</sub> emissions (EEA, 2007).

As a consequence, increasing recycling can contribute substantially to the reduction of energy-related emissions of CO<sub>2</sub> and other

environmental pressures (EEA, 2008). Further, increasing recycling reduces the amount of waste disposed at landfills. For biodegradable waste, this will also result in a reduction of methane gas emissions from landfills. However, in determining overall environmental pressures it is also necessary to take into account specific conditions for each shipment, for example emission of pollutants to the atmosphere during transport. Therefore we cannot determine what effect on the environment a particular shipment of waste has.

# Conclusions

---

The introduction to this report asked whether the negative stories we hear about shipments of waste are only the tip of the iceberg. So what then do we know about the negative and positive aspects of transboundary shipments?

Developments in shipments of waste indicate that many of the principles in the EU Waste Framework Directive and EU policies are being achieved.

- Almost all waste generated in the EU that requires disposal is disposed of within the EU. This is in accordance with the EU political target to establish a self-sufficient network of disposal installations in the EU.
- Increasingly, hazardous and problematic waste is shipped for recovery within the EU, which is also in accordance with the political target.
- Increasing amounts of waste paper, plastics and metals are exported for recycling, driven by the increasing prices of secondary waste materials and supported by EU legislation requirements for increasing recycling rates. This shows waste being used as a resource, which is in line with the EU strategy on waste prevention and recycling.

However, developments in some areas do not fulfil the requirements of the EU Waste Framework Directive nor do they comply with EU regulations on the shipment of waste.

- EU Member States have not made progress toward individual Member State self-sufficiency in waste disposal.
- It is currently not possible to document at EU level what specific kind of hazardous and problematic waste is shipped across boundaries. This is due to highly aggregated reporting.
- Similarly, aggregated reporting means that it is not possible to determine whether shipment of the waste results in better, more environmentally friendly treatment of the waste.
- It is difficult to follow some waste streams, in particular e-waste. It would appear that

the EU exports a significant quantity of used electrical and electronic products to developing countries that do not have an adequate waste management infrastructure. These are then probably subject to treatment that poses a threat to the environment and human health.

EU Member States collect a huge quantity of data and information on the shipment of waste, but it is still impossible to ascertain whether, at the EU level, these shipments reduce negative effects on the environment.

Every year, each EU Member State must submit a report to the European Commission on the annual amounts of hazardous and problematic waste imported and exported. In doing so, Member States use the same codes as are used to report to the Basel Convention. However, the 47 codes of the Basel Convention do not correspond very well to the waste streams actually exported, for example, there is no code that is clearly applicable to e-waste or contaminated wood. As a result, more than one third of the notified waste is not classified because there is no code that is suitable for the waste. Also, the codes are too general, making it impossible to determine the exact nature of the waste shipped.

However, all wastes for disposal, as well as hazardous and problematic waste for recovery, must be notified to the relevant national authorities before shipment. In addition to a detailed Basel Convention code and an aggregated Basel Convention code, this notification requires the use of codes from the European Waste List, which describe very detailed and specific waste categories (Box 8).

Currently, Member States are required to report only the aggregated Basel Convention code to the European Commission. Low-quality data on notified waste is a general problem with current reporting methods.

If Member States used the codes from the European Waste List when reporting to the European Commission, the data would provide a far better overview and enable improved

evaluation of the environmental and economic consequences of the shipments. Adding these codes would not significantly increase the reporting burden as they are already included in the application forms used by national authorities. Many countries already generate national statistics on import and export of waste based on the codes from the European Waste List.

From this improved data it would then be possible to determine whether and when the increasing amounts of transboundary shipments of waste

represent sound waste management. In turn this would provide information about whether waste shipments are driven by better treatment, sufficient capacity and effective pricing, or if waste is simply being shipped to plants and regions with lower quality standards, missing supervision or lack of legislation enforcement. In addition, more detailed reporting that gives a clear and detailed overview of legal shipments at EU level might also give a better indication of illegal shipments. The more we know about legal activities, the better will be our understanding of illegal practices.

#### **Box 8 Possibilities for improving the reporting on transboundary shipments of waste**

The authorities use application forms for notification of hazardous and problematic waste. The waste code is given according to:

- the detailed Basel List (List A and B, included in Annex VIII and IX of the Convention), which includes 120 codes of which 60 cover hazardous waste;
- the aggregated Basel List (included in Annex I and II of the Convention — 'Y-codes'), which includes 47 codes of which 45 cover hazardous waste;
- the European Waste List, which includes 750 codes of which 400 cover hazardous waste.

For example, polychlorinated biphenyls (PCBs), a class of synthetic organic chemicals, are a serious threat to human health and the environment. Since the 1970s their production has been stopped gradually. Around 1.7 million tonnes of PCBs were produced between 1929 and 1989 and a lot of equipment containing PCBs is still in use or stocked awaiting final disposal. Once released into the environment PCBs do not break down but travel over long distances and continue to pose health risks to humans, so it is important to remove them from use and destroy existing stockpiles (Stockholm Convention Secretariat, 2008).

In the European Waste List PCBs are found under six different codes according to the activity that generated the PCB waste. In both the detailed and the aggregated Basel List PCBs are found under only one code.

Because the detailed European Waste List codes are not reported to the EU, it is not possible to ascertain which activity has generated the waste. This makes it difficult to generate policy aimed at tackling PCBs.

# References

---

Toxic Trade News, 2007. *Exporters plead guilty to illegal waste shipment charges*. Available at: [http://ante.able.ban.org/ban\\_news/2007/070221\\_exporters\\_plead\\_guilty.html](http://ante.able.ban.org/ban_news/2007/070221_exporters_plead_guilty.html).

Wien International, 2007. *Environmentalists criticise illegal waste tourism in EU Member States in Eastern Europe*. Available at: <http://www.wieninternational.at/en/node/4299?SESS88d3916a5a538ac67daaf1cded7e82f4=9a9e0877e3984fb92e39e5f994cd8a93>.

ENDS Europe Daily, 2668, 28/11/2008. *Ireland urges EU action to help recycling sector*.

Basel Action Network 2002. *Exporting harm — The high-tech trashing of Asia*. February 2002. Available at: <http://ban.org/E-waste/technotrashfinalcomp.pdf>.

EEA, 2007. *Europe's environment — The fourth assessment*, Chapter 7.3. Available at: [http://reports.eea.europa.eu/state\\_of\\_environment\\_report\\_2007\\_1/en](http://reports.eea.europa.eu/state_of_environment_report_2007_1/en).

EEA, 2008. *Better management of municipal waste will reduce greenhouse gas emissions*. EEA Briefing No 1/2008. Available at: [http://reports.eea.europa.eu/briefing\\_2008\\_1/en/](http://reports.eea.europa.eu/briefing_2008_1/en/).

ETC/RWM, 2008. *Transboundary shipments of waste in the EU — Developments 1995–2005 and possible drivers*. Technical Report 2008/1. Available at: <http://waste.eionet.europa.eu/announcements/ann1204546983>.

European Commission, 2007. *The EU Member States reporting according to Commission Decision 99/412/EEC of 3 June 1999 concerning a questionnaire for the reporting obligation of Member States pursuant to Article 41 (2) of Council Regulation (EEC) No 259/93*.

Eurostat, 2007. COMEXT database.

Norwegian Pollution Control Authority, 2008, personal communication.

Greenpeace 2008. *Chemical contamination at e-waste recycling and disposal sites in Accra and Korforidua, Ghana*. Greenpeace Research Laboratories, Technical Note 10/2008, August 2008. Available at: <http://www.greenpeace.org/raw/content/international/press/reports/chemical-contamination-at-e-wa.pdf>.

IMPEL (The European Union Network for the Implementation and Enforcement of Environmental Law), 2005. *IMPEL-TSF threat assessment project — The illegal shipments of waste among IMPEL Member States*. May 2005.

Secretariat of the Basel Convention, 2007. *Reports from the Basel Convention Parties to the Secretariat of the Basel Convention on shipment of waste in accordance with the Basel Convention on the control of Transboundary Movements of Hazardous Wastes and their Disposal*. Available at: <http://www.basel.int/natreporting/compilations.html>.

Stockholm Convention Secretariat, 2008. *PCBs overview*. Available at: <http://chm.pops.int/Programmes/PCBs/tabid/272/language/en-US/Default.aspx>.

European Environment Agency

**Waste without borders in the EU?  
Transboundary shipments of waste**

2009 — 20 pp. — 21 x 29.7 cm

ISBN 978-92-9167-986-7

EEA Report series: ISSN 1725-9177

DOI 10.2800/14850



European Environment Agency  
Kongens Nytorv 6  
1050 Copenhagen K  
Denmark

Tel.: +45 33 36 71 00  
Fax: +45 33 36 71 99

Web: [eea.europa.eu](http://eea.europa.eu)  
Enquiries: [eea.europa.eu/enquiries](http://eea.europa.eu/enquiries)

ISBN 978-92-9167-986-7



9 789291 679867



Publications Office  
[Publications.europa.eu](http://Publications.europa.eu)

