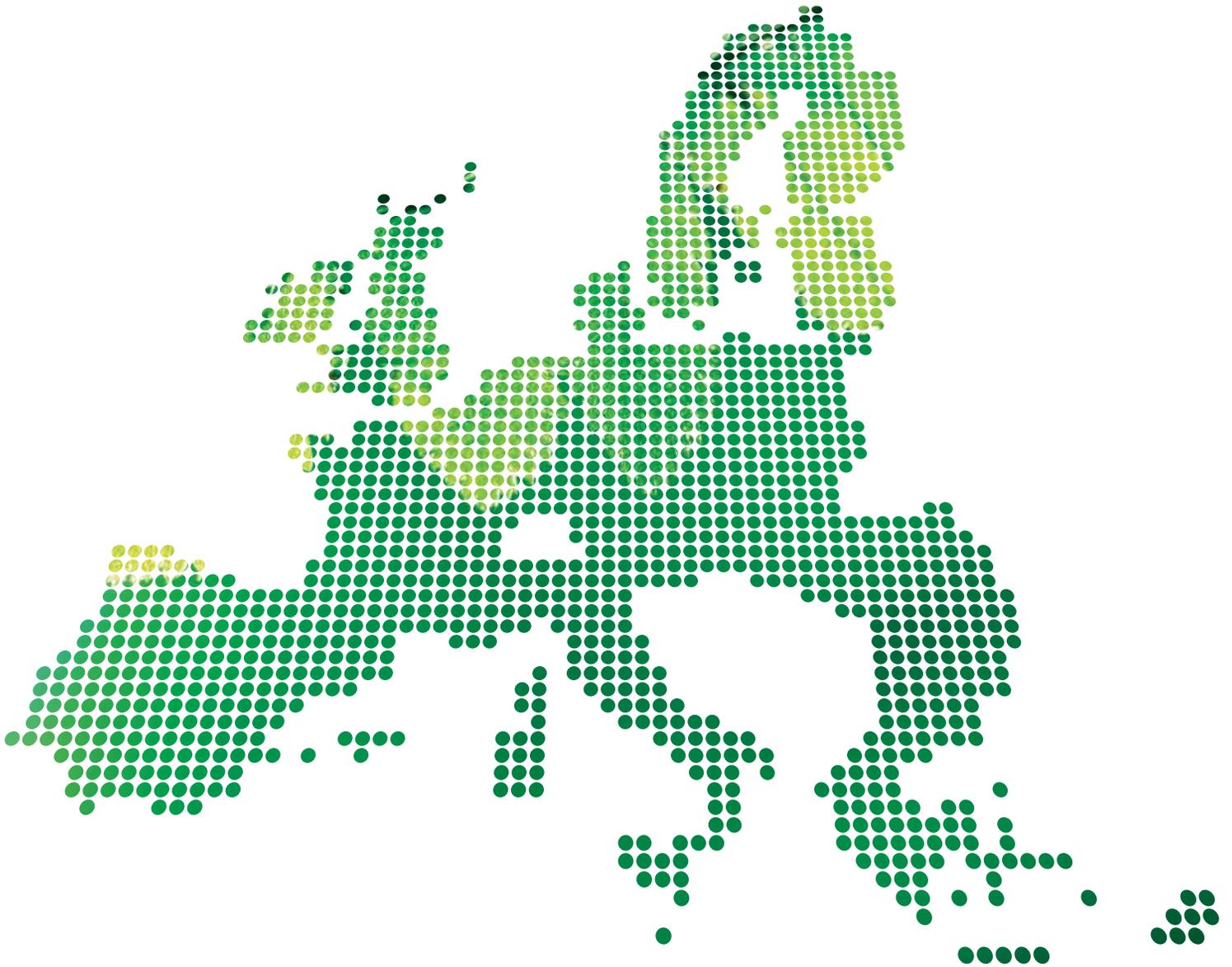




European
Recycling
Platform

A better WEEE Directive to support a Sustainable European Resource Management



Assessment and proposals for the
Revision of the WEEE Directive
based on the European Recycling
Platform's 4 years of operations

The background of the slide is a bright blue sky with large, fluffy white clouds. The clouds are concentrated in the lower half of the image, with the sky being a clear, vibrant blue in the upper half.

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Umberto Raiteri, CEO, ERP

Message from the CEO

As the CEO of ERP I am pleased to introduce our findings concerning the EU proposal to redefine the WEEE Directive. I believe that our involvement in implementing the directive since 2005 across EU states gives us a unique insight into the complex issues involved.

The European Recycling Platform (ERP) was created by Braun, Electrolux, HP and Sony in 2002 as the first ever pan-European take back scheme to effectively implement the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive.

The mission of ERP is to enable a better European resource management by ensuring **effective implementation** of the WEEE Directive – and other product recovery directives, for the benefit of member companies, their customers, the consumers and ultimately for the environment and society. The company's aim is to perform WEEE collection and recycling to high environmental standards and ensure cost efficiency. ERP operates a common waste management platform designed to:

- > **meet** the specific requirements of electrical and electronic producers
- > **promote** efficient and innovative recycling strategies, while actively embracing the concept of individual producer responsibility as set out in the EU Directive
- > **open up** opportunities for pan-European recycling services and cross-border competition in the waste management service market.

In 2009, ERP has operations in 11 countries across the EU servicing more than 1300 customers (EEE producers and retailers). Since the start of operations in 2005 ERP has collected and recycled more than 700,000 tonnes of WEEE. ERP represents approx. 15-20% of the WEEE CRO market. In 2009 ERP started Battery take back operations across 6 countries and will expand this to other countries going forward.

ERP has established competition in the WEEE Compliance Scheme Market and has stimulated the creation of multiple WEEE take back organisations in the European Member States. Only a few countries are left where one-single scheme is in operation.

Due to this competition cost for the take back services has been significantly reduced – compared to a benchmark of August 2005 by > € 200 Million per year. This cost avoidance has left more money in the consumer's pocket. As a result, environmental quality and economic performance are hand in hand and deliver sustainable services to the European society.

In the context of the recent publication, by the European Commission, of a proposal to revise the WEEE Directive (COM(2008) 810 final², ERP has carried out an assessment of the current implementation of the WEEE legislation (collection and recycling) and has uncovered several gaps. We have based our evaluation on the experience accumulated through running operations since August 2005 and have developed practical proposals, to close these gaps and to improve the quality of the WEEE legislation and processes involved.

ERP has strong respect for all stakeholders involved in the development of this market, especially the Member States authorities that have entered a highly complicated market. ERP is pleased, to provide knowledge and information to the stakeholders in order to allow a strong resource management market in Europe to make European production and consumption more sustainable.

In this document we are not making detailed proposals for amendments of the WEEE Directive, as we believe, that the logic of the reality will enable the political institutions to take the right logical consequences. However, ERP and its expert teams in all the countries are available to provide further thinking and recommendations on the process to improve the WEEE Directive on a European and national level.

The aim of our document is to outline:

- 1) the purpose of the WEEE legislation and ERP support towards better environmental standards**
- 2) the gaps in the WEEE Directive identified through the assessment of the WEEE collection & recycling in Europe**
- 3) the ERP proposals to close these gaps and improve the efficiency of the WEEE legislation**

¹ For more information on the ERP and its activities, please go to <http://www.erp-recycling.org/>

² The Commission's proposal is available at: http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexplus!prod!DocNumber&lg=EN&type_doc=COMfinal&an_doc=2008&nu_doc=0810



Executive Summary

Based on the management of our day to day operations to recycle and treat WEEE, and on our assessment of the WEEE collection and recycling market, we would like to emphasise that:

- > The WEEE Directive has succeeded in two aspects:
 - The principle of making the producer responsible.
 - Waste of Electrical and Electronic Equipment is mostly prevented from being land filled.
- > ...and failed in others:
 - The intention to get a grip on all WEEE streams, assure prevention of bad treatment and illegal exports has not been fully achieved
 - A very large amount of WEEE, though collected, is not reported, not accounted for and might be not treated in an environmentally sound manner in accordance with the requirements of the WEEE Directive.

The assessment of the situation of the WEEE market in Europe shows a clear picture of where there is a need to close gaps in order to optimise the environmental benefits of the WEEE directive.

In this framework, we propose concrete solutions to ensure that a much bigger part of the WEEE stream is traced and managed properly:

- > **Ensure and monitor high quality treatment standards:** As only 30% of total WEEE (non valuable material) are given to the Collection & Recycling Organisations (CROs) and handled and reported according to the WEEE Directive, the bigger stream of WEEE (>70%) sold off by other participants goes unreported and is thus untraced. It is important that the quality of the treatment is controlled and measured at the input/output of permitted and qualified treatment and recycling facilities.
- > **Need for registration of all organisations handling WEEE:** Approximately 70% of total WEEE, (valuable material), is being sold by municipalities and retailers to recycling companies, scrap dealers and brokers. It has a value of €350-600 Million. Those streams that exist outside the CROs are not covered today by the WEEE regulations. Therefore, it is important to ensure that any organisations dealing with WEEE is included in the scope compliant with the WEEE legislation and become registered and accountable and follows the environmental standards..
- > **Reporting WEEE volumes into WEEE registries:** Today the discussion is about making producers liable for all WEEE and set a 65% collection target. As >70% of WEEE is handled by other participants in the WEEE supply chain, such proposal will not solve the problem. The WEEE supply chain (municipalities, retailers, recycling companies, scrap dealers and brokers) should report the volumes they are trading (selling/buying) to the national WEEE Registries, which should constitute the core of the national reporting.
- > **Exports outside the EU:** A significant part of WEEE is still exported outside the EU, however there is sufficient capacity in Europe to treat and manage this WEEE stream. A ban of export of any WEEE needs to become the legal principle within the EU. Few, clearly defined exemptions can be defined to enable second-hand business and global repair services. The challenge in this area is to provide the right tools to the customs authorities to enable their control and to identify transporters claiming that products are intended for re-use.



Purpose of the WEEE legislation

- > **ERP fully supports the objective of the WEEE legislation, that is the prevention, reuse, recycling and recovery of Waste Electrical and Electronic Equipment, as well as the reduction of its disposal.**
- > **ERP calls for the treatment of all WEEE to be covered by the requirements of the WEEE legislation according to strict environmental standards within the EU.**

ERP supports in its daily operations the objectives of the Community's environment policy and, in particular, to preserve, protect and improve the quality of the environment. In this context, and as the amount of WEEE generated in the Community is rapidly growing, we are in full agreement with the objectives of the WEEE legislation in terms of prevention, reuse, recycling and recovery of WEEE, as well as the reduction of its disposal (including hazardous components).

Furthermore, the WEEE legislation also seeks to improve the environmental performance of all operators involved in the life cycle of EEE (Electrical and Electronic Equipments), e.g. producers, distributors and consumers and in particular those operators directly involved in the treatment of WEEE.

As the most relevant environmental improvements are linked to higher collection rates and improved quality of treatment³, it should be ensured that the treatment of all WEEE disposed of by consumers and professional users, are covered by the requirements of the WEEE legislation.

³ Please see the United Nations University report on the review of the WEEE Directive (2008): http://ec.europa.eu/environment/waste/weee/pdf/final_rep_unu.pdf



The Situational Assessment of WEEE Collection & Recycling and identification of the gaps

The situational assessment of the WEEE market in Europe shows a clear picture of where there is a need to close the gaps in order to optimise the environmental benefits of the WEEE Directive:

- > Only 30% of the WEEE stream is actually covered by the WEEE legislation, while the valuable material streams are managed without control, audits and permits outside the WEEE legislation.
- > The valuable WEEE stream (>70% of total WEEE) has a market value of approx. €350-600 Million. This business is made by municipalities, retailers, recycling companies, scrap dealers and brokers.
- > The non valuable WEEE stream (<30% of total WEEE) creates a cost factor of approx. €400- 500 Million for CROs financed by the producers, who ultimately get this money from European consumers.
- > A significant amount of WEEE is still exported outside the EU to maximize profits of recycling companies and scrap dealers.

The purpose of this assessment is to describe the reality of WEEE material flows in Europe and to compare it with the obligations deriving from the WEEE Directive.

Consumers in Europe basically use the following options to discard their old appliances:

A. Collection

1. "Municipal Collection"

So called "Municipal collection" is either performed by local authorities (municipalities or counties). Some collect WEEE themselves while other contract parties to do it on their behalf. The key characteristic of municipal collection is that it is managed and financed by local, public waste management entities.

"Municipal collection" takes place in two basic forms:

- > Drop-off points at recycling or collection centres, landfills, trucks in public places, etc.
- > Doorstep collection in various forms (on demand, pre-announced collection rounds,...)

When the householders place the appliances on their doorstep for the next morning collection, some people drive through the cities and collect as many valuable materials from the streets as they can. These materials are then sold off by this "informal sector" to recycling companies, scrap dealers and brokers or are exported outside the EU via traders.

The material really collected by municipalities is then consolidated by municipalities and/or their contractors on specific "consolidation centres", which are located on landfills, recycling centres, collection centres, etc. In this consolidation process, the various WEEE streams are sorted into different types of containers with a clear distinction: valuable and non-valuable materials.

Roughly 60-80% of total WEEE is managed via these processes.

The WEEE Directive foresees, that municipalities and/or their contractors hand WEEE over to the various Collection & Recycling Organizations (CROs), which are established by producers, retailer and/or recycling companies.

The reality, however, is very different, as municipalities and/or their contractors separate out the "positive value fraction" of WEEE from the total WEEE streams. The valuable fraction is then sold to recycling companies, scrap dealers, scrap brokers and similar enterprises:

- > 70-90% of LDA are sold by municipalities
- > 50-80% of valuable IT and Telecom materials are sold by municipalities.



Examples:

> Germany:

- 90% of municipalities sell all Large Domestic Appliances (LDA) such as washing machines, dishwashers, etc. to metal recovery companies and scrap dealers. Estimated volumes are approx. 500-600.000 t per year.
- Positive value IT and Telecommunication equipment such as laptops, mobile phones, laser printers, etc. are sold by municipalities. Estimated volumes are approx. of 50-80.000 t per year.

> Spain:

- >90% of LDA and >60% of cold appliances are being managed by the “chatarreros” (scrap dealers), who buy this material from municipalities. Estimated volumes are 120-140.000 t per year.
- Positive value IT and Telecommunication WEEE such as laptops, mobile phones, laser printers, etc. are sold by municipalities. Estimated volumes are approx. of 20-40.000 t per year.

> Portugal:

- > 70% of LDA are sold by municipalities to recycling companies and scrap brokers. Estimated volume: 20-40.000 t per year.
- Positive value IT and Telecommunication WEEE such as laptops, mobile phones, laser printers, etc. are sold by municipalities. Estimated volumes are approx. of 5-10.000 t per year.

> UK:

- > 70% of LDA are sold by municipalities to recycling companies and brokers. Some of the permitted CROs act basically as a broker and buy materials from municipalities, although they have almost no producers as customers/members. Estimated volumes: 300.000 t per year.
- Positive value IT and Telecommunication WEEE such as laptops, mobile phones, laser printers, etc. have been sold by municipalities. Estimated volumes: approx. 40-20.000 t per year.
- In some cases, municipalities sold old TV sets to brokers, who have sold this into Africa, declaring them as “reusable” appliances according to Greenpeace.

To quantify and measure the scope of this business for the municipalities, one can take the following rough estimates:

- > In 2008 approx 10 Million ton of WEEE was discarded by consumers (WEEE arising).
- > Approx. 2.5-3.0 Million ton of WEEE was collected and treated by CROs (WEEE collected).
- > Approx. 7-7.5 Million ton of WEEE was sold onto the market by municipalities and retailers.
- > Approx. 5.6-6 Million ton of this was managed by cities, counties or their contractors.
- > Approx. 0.3 Million ton have been discarded by consumers in waste bins (WEEE disposal).

With an average value of approx. 50-80 €/t, municipalities sold WEEE appliances for approx. 280-480 Million Euro to recycling companies, scrap dealers and brokers. As this happens on the basis of a free market principles the WEEE Directive treatment requirements are not applied and not monitored. Also the volumes from such sales activities are not tracked and reported in most countries.

The non-valuable WEEE fraction is handed over by municipalities to the CRO's, who take care of the further recycling following the WEEE Directives requirements.

Another significant burden on the subject of municipal collection is that in some countries municipalities and their contractors have created regional monopolies. The regional contractor receives WEEE and treats this in his preferred operation. Finally this operation is financed by the CROs, as they have to buy such services (evidence notes) from the regional contractor in order to meet the CRO's obligations.

2. "Retailer Collection"

A second option for consumers to discard WEEE is the "retailer collection". This collection is either performed by the retailers themselves or by their logistics partners, who deliver new appliances to consumers. The key characteristic of "retailer collection" is that it is managed and financed by or on behalf of the retailers.

"Retailer Collection" takes place in two basic forms:

- > Consumers can drop off old appliances at the stores. This is mainly used for smaller size appliances such as mobile phones, shavers, toothbrushes, etc.
- > When a new larger appliance (LDA, Cold, TV) is delivered to a consumer's home, the logistics partner of the retailer very often takes back the old appliances. There are two basic forms of financial arrangements for this transaction:
 - Consumers pay a "handling fee", which finances the logistics
 - Logistics are financed by the logistics partner who is then selling the appliance to recycling companies, scrap dealers and brokers.

Retailers and/or their logistics partner sell the positive value WEEE to scrap dealers/brokers. This is the case again for 100% of LDA, IT and Telecoms appliances, partly for cold appliances (because of the metal value) and partly for consumer electronics, when they are sold by brokers outside of the EU (mostly Asia and Africa).

Examples:

- > A larger German Retail Chain:
 - All LDA collected is sold to scrap dealers/ brokers at a price > 80€/t
 - All positive value IT & Telecom WEEE is sold to scrap dealers at >50€/t.
- > A larger UK Retail Chain:
 - All LDA collected is sold to scrap dealers/ brokers at a price > 50GBP/t
 - All positive value IT and Telecom WEEE are sold to scrap dealers >20GBP/t
 - WEEE labelled as "reusable" material is sold to brokers, who then sell this material outside the EU.

Again, the quantification of the size of this business for the retailer is difficult, as very little data exists. However, following the same arguments and data as in the municipal estimation, we can assume that approx. 20-30% of the WEEE stream is sold by retailers. This represents approx. 1.5-2 Million ton of appliances with a sales value of 75-160 Million Euro.

The non-valuable WEEE fraction is handed over by retailer to the CRO's, who take care of the further recycling following the WEEE Directives requirements.

3. Social Organisation collection

"Social Organisation collection" is performed in cooperation with several players in the reverse supply chain. The key character of "social organisation collection" is that it is managed with the purpose of providing a material input to and a financial benefit for the social organisations (SO).

"Social Organisation Collection" takes place in two basic forms:

- > Consumers donate old appliances at the SO locations.
- > SO receives old appliances from municipalities, which can be potentially refurbished.
- > SO run their own collection network from doorsteps, events and other opportunities.

Once the SO has received the material, they refurbish appliances, often with unemployed people. The refurbished appliances are either sold at a low price or donated to charities.

The valuable fraction of the waste from the non-refurbishable parts and appliances is sold to brokers; the rest (the non-valuable fraction) is disposed of at municipal sites, who hand this non-valuable material to the producer-managed CROs.

There is no clear statistic about the volumes of WEEE handled in this way. Estimates vary between 2 and 10%.



4. Re-Use Market

The sales of used appliances have significantly increased through E-Bay and other internet reselling platforms. In poor neighbourhoods, there are also small shops selling used appliances, which may be repaired/refurbished before selling them back on the second-hand market.

The second-hand market is extending the use phase of appliances, delaying the final discarding by the ultimate owner/user of the appliance into municipal, retailer or social collection.

There is currently no figure available concerning the size of the second-hand market, or on the effect that this market has on the length of the active use phase of EEE.

However, some Re-use companies also export appliances outside the EU for refurbishment in order to build on low salaries in countries in Africa, Eastern Europe and Asia. Some studies – not published yet – indicate that African companies buy old appliances from the informal sector or from contractors waste yards without checking the functionality of these appliances and export them to Africa, where they are separated into functional units, units for refurbishment and waste. Similar activities apply also to companies from Eastern Europe (e.g. Belorussia, Ukraine). The critical element of this is that the non-refurbishable fraction remains under landfill conditions, **which are not meeting European environmental standards.**

B. From Collection to Recycling

1. Recycling Companies, Scrap Dealers and Brokers

As described above, >70% of the WEEE collected by municipalities and retailers is sold to recycling companies, scrap dealers and brokers. This business is significant, particularly as metal scrap prices have been high, soaring to levels of up to 200-300€/t. In this regards, the owner of the materials takes advantage of selling this to the metal scrap dealers. The total value of this business is approx. €350-600 Million per year.

In the metal scrap business, there are several levels in the supply chain: from small collectors (e.g. Chattareros in Spain, Lumpensammler in Germany etc.) to medium sized companies (often family driven businesses) to larger corporations who own recycling and shredder facilities.

The majority of the WEEE stream in this case is treated in car shredder facilities. In some cases even cold appliances have been “treated” in car shredders, obviously without the required permits. Such activities create significant negative environmental footprint and diminish the overall environmental benefit from the WEEE Directive. But this has also created a negative business impact for those recycling companies who manage WEEE appropriately with dismantling and removal processes. However, as this is a significant business, the dismantling recycling companies have serious difficulties competing with car shredders.

Unfortunately some recycling companies, scrap dealers and brokers are exporting WEEE outside the EU declaring this as “reusable material”. Greenpeace discovered recently, that waste from a UK municipality was sold via a broker and ended up in Africa. The product in question was definitely broken (TV set) and could not be repaired. The business model backing is the big demand on any technology appliance especially in Africa with a low volume available in these markets. Basically the exported container materials are divided into appliances directly for sales, appliances for refurbishment by cannibalising other and waste.

There is also the concern, that some treatment and shredder facilities export some of the shredder residues outside of the EU and declare this as EEE components and other “raw” material. In such cases, they use only the uncontrolled landfills in Africa and Asia to dump **hazardous waste** coming from their shredder operations.

2. Collection & Recycling Organisations (CROs)

All non valuable WEEE materials, which is approx 30% of total WEEE is managed by the collection and recycling organisations (CROs), which are set up by producers, retailers, recyclers or related associations. More than 50 WEEE CROs operate in this market within the EU. Most of them are operational in one national market only. CROs mainly work with recycling and treatment facilities and, to some extent, with scrap dealers.

The European Recycling Platform (ERP) is the only CRO which currently operates in several EU countries (11 in total). The shareholders of ERP have set high standards of quality and performance to ensure 100% quality and compliance. All treatment and recycling facilities in the chain down to the global raw materials are certified and audited. By this ERP and its suppliers ensure that all WEEE is treated within the EU.

Although we disagreed with the principle, ERP and the other CROs had to pay municipalities to be able to receive the non value WEEE fraction from them:

Examples:

- Portugal: 80€/t for consolidation work of the municipalities
- Spain: 73€/t for collection efforts of municipalities
- Germany: CROs provide containers and the allocation organisation which equals to about 50€/t
- France: 80 €/t for consolidation

While municipalities sell the positive value fraction of the WEEE to scrap dealers and brokers, which finances large parts of their waste management organisation, municipalities receive an additional income of approx. €100-150 Million from the “access to WEEE” fees, charged to the CRO’s.

ERP and the other CROs have contracts with recycling companies to treat and recycle the WEEE collected from municipalities and retailers. As a matter of principle, ERP’s contractual agreement’s structure ensures that all treatment and recycling operations take place within the EU and are audited by ERP and its General Contractors. ERP spends > €1 Million per year only on the audit of contract partners.

There have been some cases, in which ERP had to work with scrap dealers and broker-type organizations:

> Due to the evidence note system in the UK, scrap dealers, which in few cases have also a status of CRO without having significant numbers of producers as customers, are “owning” WEEE volumes, which they had purchased from municipalities and retailers. In order to meet the official collection & recycling target, which is defined by the UK government, ERP and other CROs had to purchase evidence notes from these scrap dealers. Basically these dealers asked for a significant mark up to generate significant profits out of this system, without adding any value to the WEEE treatment process. However, ERP had no opportunity to audit the process of treatment and recycling of such evidence note material, as the scrap dealers rejected any cooperation.



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- In summary these scrap dealers created only a profit out of dealing with WEEE due to the loopholes created by the UK evidence note system. Secondly the treatment and recycling quality of such evidence note material cannot be guaranteed by CROs.
 - > In Spain, the “chattarreros” own > 120.000 t of LDA and Cold appliances, which they have purchased from municipalities and retailers. ERP, together with the other CROs in Spain, tried to establish a process on auditable, high quality treatment and recycling certification, to ensure that the treatment of these materials meet the high quality standard.
 - ERP was forced in 2008 to purchase certificates from the chattarreros to meet the legal obligation of collection volumes, although the quality standard of ERP was not ensured. ERP welcomes the recent announcement made by regional governments in Andalusia and Catalonia not to accept these evidence notes anymore. ERP strives not to purchase any such unqualified notes in 2009.
 - > In Austria, the regional contractors own > 75% of all WEEE. They collect and treat this based on agreements with the municipalities and Länder. CROs basically have to “buy” this monopolized “service” from these contractors. The result is, that Austria today has one of the highest cost of treatment, as this has an implicit “monopoly prize”.
 - ERP is forced to purchase such volumes from this process to meet the legal obligation of collection volumes, although the quality standard of ERP was not ensured. ERP would welcome further investigations on this subject to enable a more competitive recycling market.

These three cases illustrate well the dilemma which CROs are facing: on the one hand, the municipalities and retailers sell the valuable WEEE streams (>70% of total WEEE) to recycling companies and scrap dealers. That is a normal business process and there is nothing wrong with this. On the other hand, national governments force CROs such as ERP to buy evidence notes and recycling certificates from the recycling companies and scrap dealers, as the governments want to have all collection & recycling volumes reported through the CROs.

This has created a situation, in which some recycling companies and scrap dealers artificially made significantly higher profits than they would have if they were dealing in a normal market situation.

3. Treatment and Recycling Facilities

Approx >85% of all WEEE collected, traded and handled in the EU via municipal and retailer collection and managed via recycling companies and scrap dealers (valuable stream) and CROs (non-valuable stream) end up in EU-based treatment and recycling facilities. As described above in the case of cold appliances “treated” in car-shredder facilities, it must be questioned, if all treatment and recycling facilities treat only those materials, for which they have a permit.

In principle, all material streams can be monitored at the treatment and recycling facilities, as all such permitted facilities have a record of what type and volume of material comes into their facility, from where, delivered by whom, when and which type and what volume of material has left the facility to where, to whom and when. This provides a significant opportunity for the Member States to get real data of the total amount of WEEE collected and treated in Europe. The “only” requirement is to establish IT systems to collect these data.

Operating across Europe, ERP has noticed that many countries have created barriers, which, we believe, go beyond the rules of the Transborder Waste Shipment Regulation, making it very difficult to transport WEEE for recycling from one EU Member State to another, where a more efficient (environment or cost) treatment facility is available. It seems, in some cases, that some EU Member States are trying to protect their national recycling industry within their country by preventing healthy pan-European competition between recycling companies. Some Member States also tend to justify, what appears to ERP as a form of protectionism, by explaining their lack of trust in the quality of the procedures in other EU Member States, with the ultimate goal of protecting the environment.

4. Exports outside the EU

Unfortunately, as described by Greenpeace, Basel Action Network (BAN) and other NGOs, the number of cases of export of WEEE labelled as “reusable products” seems to be significant. There have been reports in the last years, that recycling facilities for cold appliances have been empty for longer periods of time and that, simultaneously, large volumes of WEEE have left Antwerp, Genoa, Hamburg, Marseille, Rotterdam and other international harbours. In Eastern Europe, a large WEEE stream is moving eastward to Ukraine, Belorussia, Russia and other eastern countries.

A major issue seems to be the limited possibilities of the customs authorities to control such exports, as no relevant customs declaration lines exists.

Estimates indicate that this volume could be 10-20%, however, as these are illegal transactions, no detailed data is available as yet.

The immoral effect of such activities is obvious. ERP recommends to establish the principle of a ban of export of WEEE outside the EU and to describe clear procedures for exemptions and customs controls.



WEEE Market Situation (2006-2009)

C. The situational assessment of the WEEE collection & recycling in Europe reveals some gaps

1. Collection of WEEE from consumers is properly implemented following the WEEE Directive. Materials are collected by Municipalities (60-80%) and Retailers (20-30%) with some amount of collection via social organisations and the informal sector.

But:

- > In most countries only the WEEE volumes managed by the CROs are counted as “collected & recycled WEEE”. As approximately 70% of WEEE is sold by municipalities and retailers to scrap dealers and brokers, only 30% of the WEEE stream is managed by the collection and recycling organisations (CROs) set up by producers, retailers and recyclers.
- > Consequently only 30% of the WEEE stream is counted as collected & treated, and, for that matter, actually covered by the treatment requirements (safety, environmental protection, etc.) of WEEE legislation.
- > Furthermore, municipalities and retailers don't control the quality of the treatment process of the materials sold to recycling companies and scrap dealers. In this regard, the control of the quality of this traded material is not ensured and loopholes are created.

2. 20-30% of WEEE, which represents the non-valuable part of the material stream, is handed over to Collection & Recycling Organizations (CROs),

But:

- > All non valuable WEEE materials, due to the situation described above, are managed by CROs on behalf of producers, while all valuable WEEE materials are traded via recycling companies, scrap dealers and brokers.
- > Furthermore, the total cost of the collection & recycling for the CROs can be estimated to be approx. €400-500 Million Euro.
- > CROs pay an access fee to the municipalities and retailers to receive the collected WEEE, amounting to a cost of approx. €100-150 Million.

3. Consumers mainly use the retailer and municipal collection chain for the final discard of appliances:

- > 70% of the WEEE collected by municipalities is sold to recycling companies, scrap dealers and brokers with a sales volume of approx €280-480 Million.
- > 70% of the WEEE collected by retailers is sold to recycling companies, scrap dealers and brokers with a sales volume of approx €75-160 Million.

But:

- > Consumer finance municipal and retailer collection via local waste tax, handling fees and other financial mechanisms. Municipalities and retailers generate further revenues from selling 70% of the WEEE they collect to the scrap market.

4. >85% of WEEE stream (post collection) is treated in Europe at treatment and recycling facilities.

But:

- > Some treatment facilities treat materials for which they have no permit. Enforcement mechanisms seem to be ineffective.
- > In some countries CROs are forced by governments or governmental agencies to purchase certificates for allegedly permitted and certified WEEE recycling, without getting any control over the actual quality of the treatment process.
- > In some countries, recycling companies/scrap dealers/brokers sell evidence notes or certificates to CROs, who are de facto forced to do so by national regulation to meet their legal collection obligation. CROs have no control over the quality of the treatment and recycling of the certified materials.
- > In some countries regional monopolies between local authorities and recycling companies create an artificial high cost without adding any value to the process.

5. The information on the material input/output from treatment and recycling facilities should be easy to use for measuring quality and success of WEEE implementation as >85% of WEEE stream is treated in a limited number of recycling and treatment facilities within the EU.

But:

- > The national WEEE registries have very different standards (definitions, rules of reporting) and create significant multiple administrative layers within the Member States for the reporting producers. In some countries, the level of detail in the reporting structure is overwhelming and far too big. Consequently this data opportunity is missed today.

6. Transport of WEEE between EU Member States is covered by appropriate legislation in some countries.

But:

- > Several countries create significant barriers to treat WEEE in permitted facilities in another EU country. This limitation of a European Recycling Market hampers the development of the European recycling industry and corresponding innovations.

7. There is nothing wrong with exporting usable appliances into developing countries.

But:

- > A significant amount of material is exported illegally outside of the EU as recycling companies, scrap dealers and brokers and some so-called "re-use companies" take the advantage of low dumping cost. They sell material scrap into countries, which recover some materials in "operations" which are not meeting standards of European recycling operations.



WEEE Market Situation (2006-2009)

Fig 1: WEEE stream framework

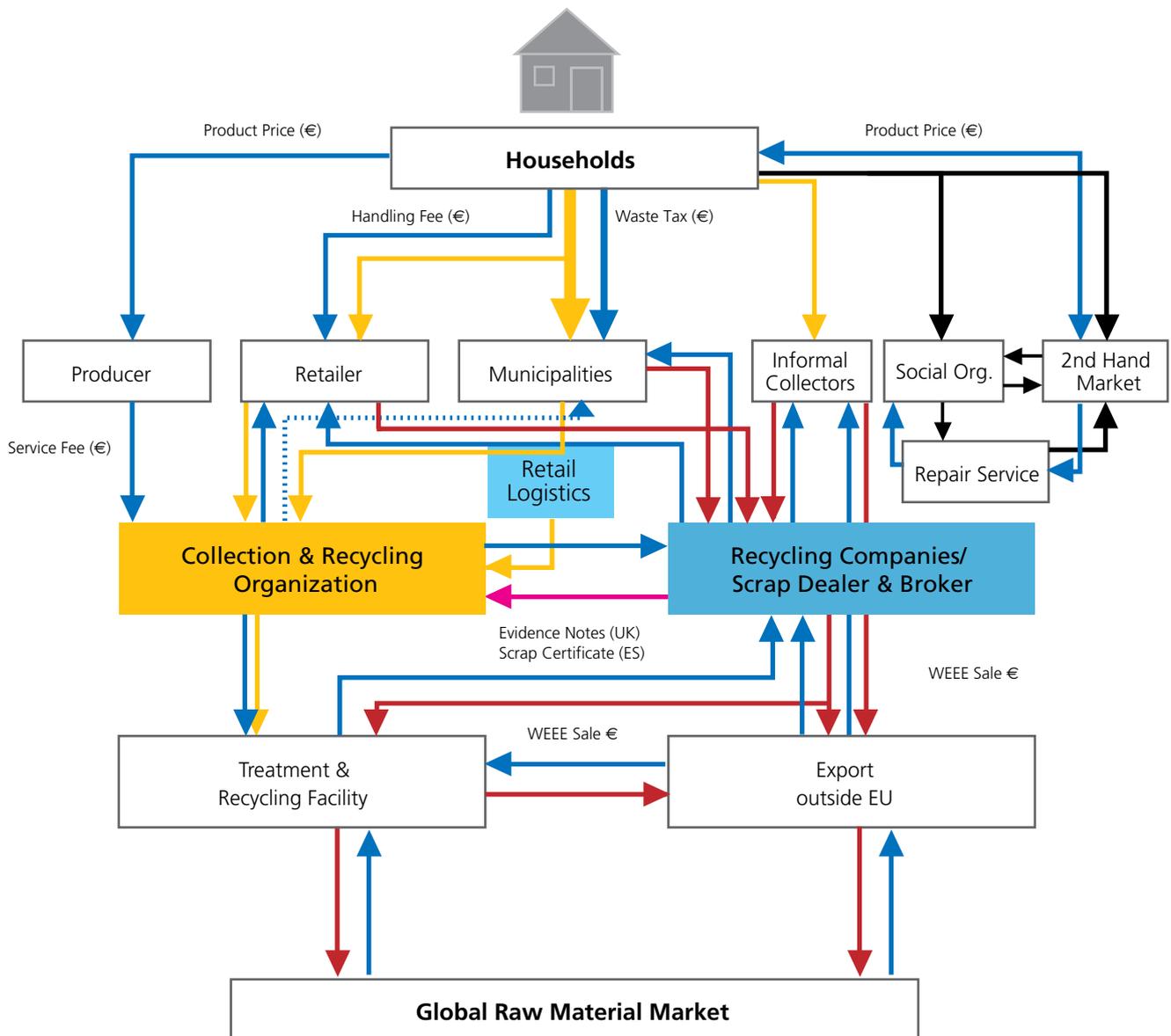


Fig.2: Only 30% of the WEEE stream is covered by the WEEE legislation

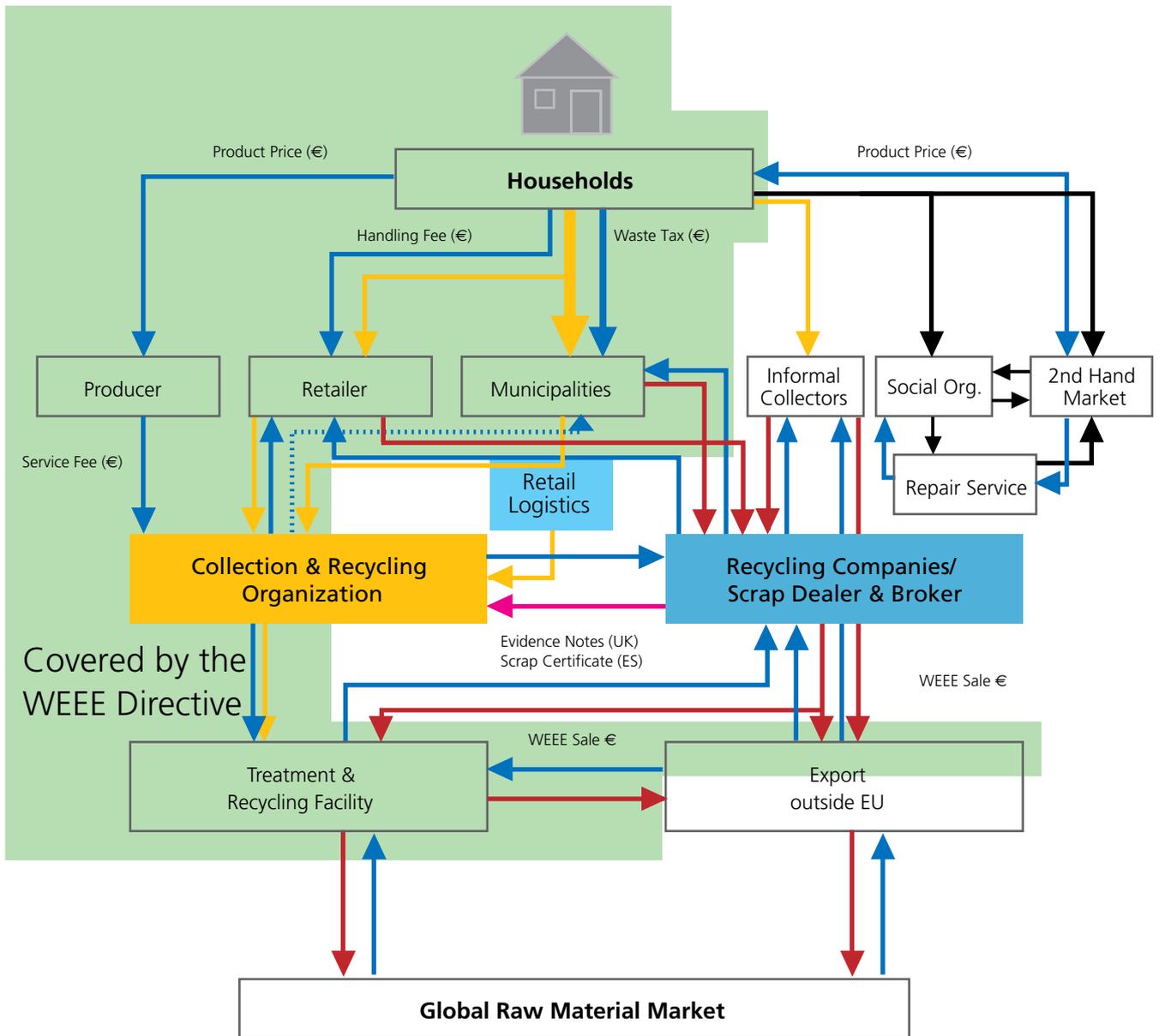
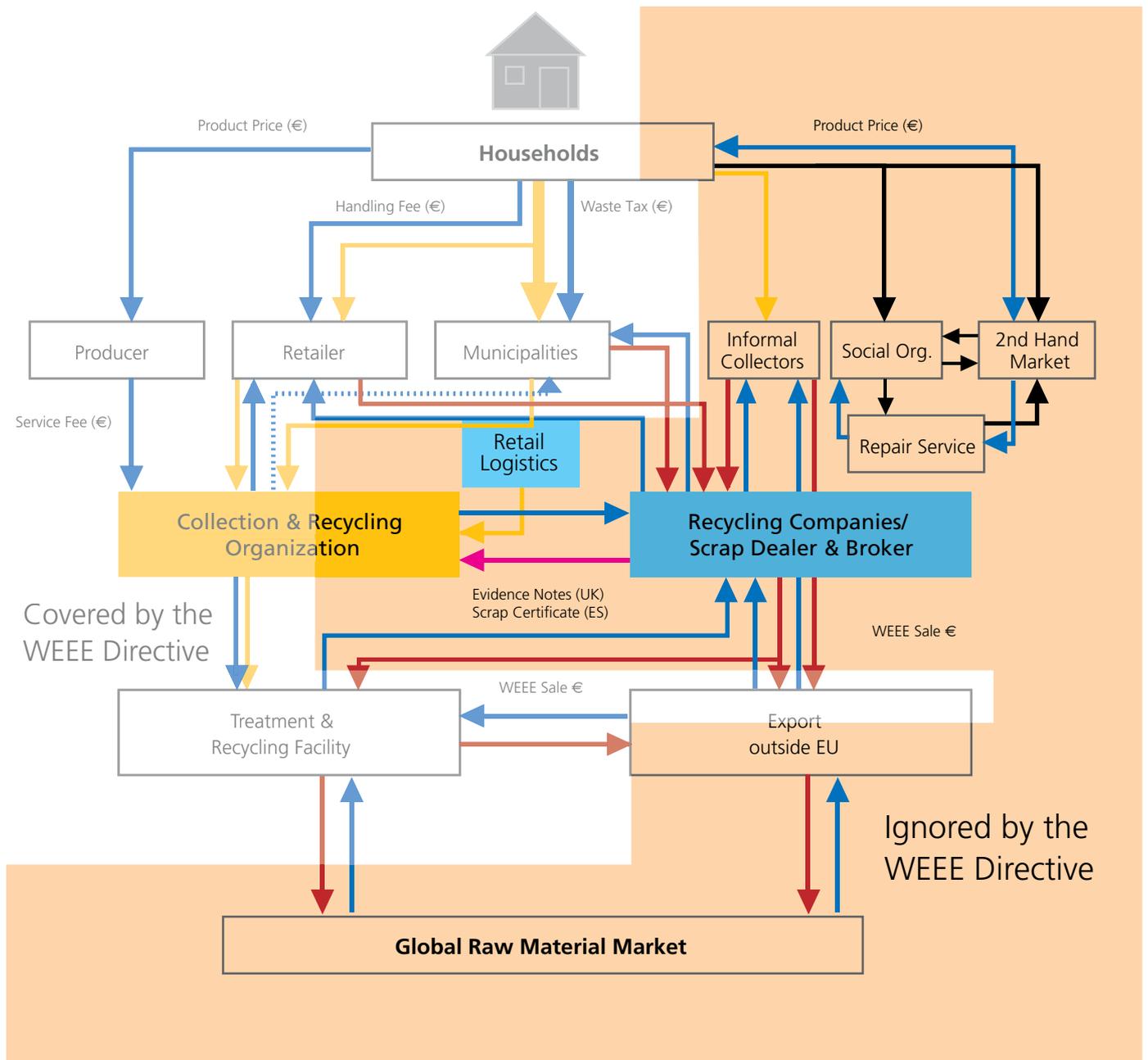




Fig. 3: 70% of the WEEE stream is not covered by the WEEE legislation





Closing the gaps

From the gaps identified earlier, the following questions and solutions can be derived:

A. How should the sales of WEEE material from municipalities and retailer to recycling companies and scrap dealers/brokers be handled?

It is important to ensure that recycling companies, scrap dealers and brokers handling WEEE are included in the scope of WEEE legislation, and act in accordance with the requirements of such legislation.

Our solutions:

- > **All WEEE participants (recycling companies, scrap dealers and brokers, etc) handling (buying and selling, treating and recycling) WEEE should be registered in the national WEEE Registry.**
- > **Municipalities and those who act on behalf of municipalities in handling WEEE, and retailer selling WEEE should be allowed to sell WEEE only to registered WEEE participants (recycling companies, scrap dealers and brokers, etc).**
- > **Registered WEEE participants (recycling companies, scrap dealers and brokers, etc) must report their WEEE volumes to the WEEE Registry.**
- > **Registered WEEE participants (recycling companies, scrap dealers and brokers, etc) should be allowed to sell WEEE only to another registered WEEE participant (recycling companies, scrap dealers and brokers, etc) or to a qualified and certified WEEE treatment facility.**
- > **CROs should not be forced to purchase evidence notes or other type of certificates from recycling companies, scrap dealers and brokers, local monopolies etc.**
- > **B2B material trade via scrap dealers and WEEE broker must be included in the WEEE reporting structures.**

In the discussion on sales of WEEE, the first question that comes to mind is: Is it possible to stop such sales and to move all materials from municipalities and retailers directly to CROs? The answer to this question is very clear: in a free market situation, we cannot prevent anyone from selling valuable materials onto the scrap market unless we force all municipalities and retailers by regulation to hand all collected materials over to CROs. In principle producers and CROs are willing to take all WEEE arising from the municipal and retailer collection, as this would create a significant lower cost to the CROs. But the power of a €600 Million market will be stronger and such a mandatory handover to CROs will be by-passed by such a market.

Furthermore these sales generate revenues for retailers and municipalities in the region of up to €600 Million, which allows them to finance collection and communication efforts. The value of the WEEE material is basically financing the collection and communication cost, incurred by municipalities and retailers.

The consequence of this situation is that CROs, who are financed ultimately by a price paid by consumers to the producer, should not contribute more to municipal activities with regards to awareness raising campaigns and collection processes.

However, as described earlier, the treatment processes used by some scrap dealers and brokers are often not on a par with WEEE Directive treatment requirements. Valuable WEEE is often treated in car shredder facilities, which have no permit for such operations. And some scrap companies export WEEE out of the EU, aiming at making profit, and not at carrying environmentally sound treatment.

In this context, it is important to ensure that all WEEE participants (recycling companies, scrap dealers and brokers, etc) handling WEEE are included in the scope of the WEEE legislation, and act in accordance with the requirements of such legislation. However, currently such WEEE participants (recycling companies, scrap dealers and brokers, etc) buying WEEE do not fall under the WEEE regulations. It seems to be necessary to include this market in the WEEE legislation, as it manages the majority of WEEE streams. This extension of the WEEE legislation to all WEEE participants (recycling companies, scrap dealers and brokers, etc) should meet the following requirements:



1) All WEEE participants (recycling companies, scrap dealers and brokers, etc) handling WEEE should be registered in the national WEEE Registry.

This will ensure that all companies handling WEEE are legally known, identifiable, accountable and qualified. In this qualification process, WEEE participants also need to provide evidence, that they have a material tracking process established and that they work only with certified and permitted WEEE treatment facilities.

It will be important to establish a right threshold for such registration needs, in order to avoid over-organised structures, as it makes no sense that a small sanitary enterprise, changing a heating boiler, is a registered “WEEE participant”. However, the scrap yard, buying the collected volumes from such sanitary enterprise could be the starting point of registration.

The other complication will be the “informal sector” with operations from Eastern Europe or Africa, which buy and export materials. They will not be registered anyhow, but need to be addressed in the export ban.

2) Municipalities and those who act on behalf of municipalities in handling WEEE, and retailers selling WEEE should be allowed to sell WEEE only to registered WEEE participants (recycling companies, scrap dealers and brokers, etc)

The enforcement of this requirement should be simple and straightforward, as municipalities act as public bodies. However, in many cases municipalities don’t act on their own, but have delegated this task to private companies or have created for that purpose their own public companies. In this case, the requirement must also include the companies acting on behalf of municipalities or similar public bodies.

The result of this requirement will be that the majority of the WEEE stream is sold and managed by registered WEEE participants (recycling companies, scrap dealers and brokers, etc) which are registered, accountable and qualified.

3) Registered WEEE participants (recycling companies, scrap dealers and brokers, etc) must report their WEEE volumes to the WEEE Registry

The registered WEEE participants (recycling companies, scrap dealers and brokers, etc) should report to the national WEEE Registry all the volumes they have purchased from municipalities and retailers or from other sources, and which they have treated themselves or sold to other treatment and recycling facilities. Once they are registered in the WEEE registries, the enforcement of this requirement is simple and straightforward. Due to the large quantities handled by these companies, it is recommended that monthly reporting takes place.

The result of this requirement will be that the majority of the WEEE stream is sold and managed by recycling companies, scrap dealers and brokers which are registered, liable and qualified and that the actual volumes they are handling are known at the national level via the WEEE registries.

4) Registered WEEE participants (recycling companies, scrap dealers and brokers, etc) should be allowed to sell WEEE only to another registered WEEE recycling company or to a qualified and certified WEEE treatment facility.

This is a logical step in connecting the WEEE participants (recycling companies, scrap dealers and brokers, etc) who buy and sell WEEE to ensure that this supply chain is ending only at qualified treatment facilities in Europe. External certification of the WEEE treatment processes for treatment facilities seeking registration would enable a straightforward enforcement of this requirement.

The result of this requirement will be that the majority volumes of the WEEE stream is sold and managed by registered WEEE participants (recycling companies, scrap dealers and brokers, etc) who are registered, accountable and qualified and work with qualified treatment facilities within Europe.

5) CROs should not be forced to purchase evidence notes or other type of certificates from scrap dealers, brokers or local monopolies.

With all WEEE participants (recycling companies, scrap dealers and brokers, etc) registered and reporting their volumes to the national WEEE registries, there will be no need, for evidence note systems such as those established in the UK or Spain. Also the local monopolies such as in Austria should become obsolete in such

a transparent environment to enable a fully functional market. This will reduce the total cost for the CROs and finally will save European consumers approx. €100-150 Million.

6) B2B material trade via scrap dealers and WEEE brokers must be included in the WEEE reporting structures.

B2B materials, which are sold from users to scrap dealers or WEEE brokers should also be reported into the WEEE registry- including those volumes, which are traded as valuable materials.

B. How can illegal WEEE exports out of the EU be stopped?

There is nothing wrong with exporting usable appliances into developing countries as this will support the technology development; it is however important that the European responsibility on sustainability is not undermined.

Our solutions:

- > **A principle ban of export of any WEEE outside the EU.**
- > **All companies exporting second-hand appliances should be registered in a WEEE Registry and made known to the customs authorities.**
- > **Second-hand appliances for export must have certification that proves that these appliances are fully functional.**

Although the EU has the most stringent export control of waste into non EU countries, significant quantities of WEEE still end up in Africa and South-East Asia. A recent "test" undertaken by Greenpeace revealed that a WEEE container sold by a UK municipality to a scrap dealer was shipped to Africa and ended up in one of Kenya's largest WEEE locations.

In recent years, Basel Action Network (BAN) has repeatedly documented the significant impact of such illegal WEEE handling on the health of children and people in these countries as well the significant damage to the environment. Such exports are simply not acceptable!

There is nothing wrong with exporting usable appliances into developing countries, as this provides opportunities for people to

participate in the usage of new technology, it can contribute to closing the digital divide. This is the case with the second-hand market, both within and outside the EU.

1) A principle ban of all WEEE exported outside the EU needs to be established.

Instead of describing first the exemption, the legal principle of an export ban should be established. Based on such a principle a clearly defined exemption can be described and executed. This will allow the customs authorities, to control this sector better and to make all WEEE participants liable and accountable.

Few exemptions should be described to enable a controlled export of second-hand market appliances and to ensure connection to the global repair service market.

2) All dealers exporting second-hand appliances should be registered in a WEEE Registry.

This will ensure that all stakeholders in the export of second-hand appliances are legally known, identifiable, accountable and qualified. In this qualification process, dealers also need to provide evidence that they have a material tracking process established and that they have a process to qualify the full functioning of second-hand appliances.

By this action, it can be ensured that all WEEE appliances managed by scrap dealers and which might be transformed into fully functional second-hand appliances can be tracked and that Greenpeace's tracking activities will not be needed anymore.

3) Only certified second-hand appliances are allowed to be exported outside the EU.

There should be no WEEE export outside the EU. Only WEEE material which has been transformed by professional processes into a second-hand appliance can be exported. This will also enable custom authorities to reject any export permit for non second-hand appliances. The enforcement of such requirement also implies that there is a certification process for second-hand appliances.



By this action it can be ensured, that only certified second-hand appliances are exported outside the EU and that all other materials are used as a resource within the EU.

4) Second-hand appliances for export must have certification proving that these appliances are fully functional.

To apply the requirement demanding that only second-hand appliances are allowed for export outside the EU, there must be a certification process. Technical certification bodies should provide the details for such certification processes built on existing knowledge about appliance safety. The enforcement of this requirement could be carried out by the customs authorities, who could be made the authorised certification bodies for this certification. All those who want to export such appliances must provide the respective certificate from an authorised certification body.

By this action it can be ensured that only certified second-hand appliance are exported outside the EU and that all other materials are used as a resource within the EU.

5) Global Repair service market should be enabled.

As the EEE market is a global market also repair service market became global. Several global companies have established repair and refurbishment services on a global scale. In a controlled and traceable manner such operations should be allowed. The repair and refurbishment centres should be certified and annually audited following EU standards to ensure, that such operations are not abused for low-cost dumping.

C. How to understand the real WEEE volumes collected and treated within the EU?

The registration of all WEEE treatment and recycling facilities will ensure that the majority of WEEE streams fall in the scope and under the requirements of WEEE legislation. Material flows can then be properly monitored and tracked from the input/output of the WEEE treatment and recycling facilities.

Our solutions:

- > All participants in the WEEE supply chain must report their**

WEEE volumes to the WEEE Registries.

- > All treatment & recycling facilities must be registered with the national WEEE registries, and should report their input/output material streams.**
- > All WEEE Registries should follow the same rules and definitions.**

One of the key objectives of the WEEE Directive is to monitor and track all WEEE streams independently from the sources and destinations. Until now, and in most countries, only the CRO volumes are tracked.

With the registration and qualification of all treatment and recycling facilities, which could report all their input/output volumes on a quarterly basis, >85% of all WEEE collected and recycled will be covered.

A few countries have forced CROs to purchase evidence notes and certificates from scrap dealers and to integrate these numbers in the CROs reports. However, as described above, CROs have, in such cases, no control over the quality of the treatment processes for the WEEE materials which are "certified" in such evidence notes and certificates. This legitimises the uncontrolled WEEE flows.

With the registration of recycling companies, scrap dealers and brokers the majority of WEEE streams will fall in the scope and under the requirements of WEEE legislation. Material flows can then be monitored and tracked.

With a ban on export of WEEE in Third World Countries– but not of second-hand products – all WEEE streams within the EU will finally be treated and recycled in facilities within the EU. As all treatment and recycling facilities are permitted, they should be obliged to monitor and track their income and outbound material flows. In this regards, they are the best place to track and monitor all WEEE material flows.

1) All stakeholders in the WEEE supply chain must report their WEEE volumes to the WEEE Registries

In order to have a transparency of WEEE handling within the EU, all stakeholders in this chain should report their volumes and the

transactions related to the volumes to the national WEEE registries.

Collection: Municipalities, retailers and other major collectors should report quarterly the volumes they have collected (input), sold to scrap dealers and handed over to CROs (output). This is the first level of evidence for the collected volumes.

Interim handling: CROs, recycling companies, scrap dealers and brokers and other interim handlers of WEEE should report, on a quarterly basis, the volumes they have sold or handed over to permitted treatment and recycling facilities. This is the second level of evidence for collected volumes.

Treatment & Recycling: all permitted treatment and recycling facilities should report, on a quarterly basis, the volumes they have received from scrap dealers, CROs and other sources of WEEE and should report their output volumes sold to the global raw material market or sent to disposal facilities (landfills, incinerators).

By this action, the entire "supply chain" of WEEE can be monitored and tracked. It would be recommended to establish an EU wide harmonised reporting tool, which could be universally used in all EU countries. With such monitoring and tracking of volumes, the reality of the WEEE collection and recycling can be continuously evaluated and verified. There is no need for further detailed studies on the reality of the WEEE market. It would also avoid entering into political debates on which study is closer to reality. It will also prove, that the collection and recycling rates today are already beyond any proposed target.

2) All treatment & recycling facilities must be registered at the national WEEE registries

This will ensure that all treatment and recycling facilities, treating WEEE are legally known, identifiable, liable, permitted and qualified. This process should also include facilities, whose main purpose is for example car recycling, but who also treat large domestic appliances with their shredder technology. The existing permit of a car shredder should therefore be extended into some WEEE treatment processing.

This measure would ensure that all WEEE streams managed at treatment facilities, are qualified and permitted for such treatment.

3) All WEEE Registries should follow the same rules and definitions

This will ensure that all players in the WEEE supply chain have to follow the same basic rules on reporting and reporting structures. This will allow them to automate, using IT software, tools for their reporting. It will also support the development of the European recycling industry market.

However, ideally all WEEE registries should work on the same internet platform, as the basic information and reporting structures should be the same across the EU. This would enable the EU to improve performance and reporting on WEEE success. Ideally the European Environmental Protection Agency would agree such principles and Member States would execute them with the most efficient IT tools developed.

As WEEE Registries are becoming a powerful monitoring and controlling tool of the EU Member States, integrating them into the national environmental protection agencies and their work flows should be considered.

This action ensures that all WEEE streams managed throughout the WEEE supply chain are transparent to the public.

D. How to open the EU market for WEEE treatment and recycling?

Only open markets provide business opportunities and the treatment of WEEE with the same rules across the EU would benefit the WEEE treatment and recycling market.

Our solutions:

- > **All WEEE treatment and recycling facilities should be permitted in all EU Member States on the same technical basis which should deliver the minimum quality standard for the treatment of WEEE in the EU.**
- > **Qualified and permitted WEEE treatment and recycling facilities should be allowed to receive WEEE from all EU countries without any limitation.**



As described above, ERP believes that many countries in the EU have, to some extent, closed their borders for WEEE treatment outside of their territories, as they don't trust the quality of treatment in other EU countries or they just want to protect their national recycling industries.

However, the experience with the development of markets in all business sectors shows strong evidence that only open markets provide business opportunities. This said the quality argument is important and should be taken into account.

ERP invests annually > €1 Million into the quality management and audit of treatment and recycling facilities as well as in collection centres and other participants handling WEEE. ERP supports the process of standardisation of treatment and recycling to ensure, that a minimum standard is met in all EU Member States.

With the registration of all treatment and recycling facilities, we are taking the first step towards a harmonised permitting system of treatment and recycling facilities. However, they should be based on the same principle.

1) All WEEE treatment and recycling facilities should be permitted in all EU Member States on the same technical basis which should deliver the minimum quality standard for the treatment of WEEE in the EU

The WEEE Directive's minimum quality standard for WEEE treatment should be extended into technical standards for treatment and recycling of WEEE. Such technical standards should then become a permit requirement for the operation of such facilities.

With such minimum harmonised treatment standards the same minimum quality can be ensured across the EU. This is the most efficient way for the enforcement of such quality standards.

Member States should be free to require more stringent technical requirements, if they want to increase the environmental profile of their country and recycling industry. This will support the business development of their recycling industry and will drive the quality standards within the EU.

The minimum quality standards should not be fixed in the WEEE legislation itself. It should be developed by an "expert group from technical certification bodies", who have sufficient experience in the certification of treatment and recycling facilities and who are not biased by the WEEE industry or the EEE industry. The results of this expert group can then be made legally binding in all EU countries as a minimum standard by the TAC and the Commission.

By this action minimum quality of the complete "supply chain" of WEEE can be defined and further developed. The independent expert group will provide the latest technological knowledge, which should then be applied in all EU countries.

- 2) Qualified and permitted WEEE treatment and recycling facilities should be allowed to receive WEEE from all EU countries without any limitation

WEEE treatment and recycling facilities should in principle be allowed to receive WEEE from any country in the EU provided that they are registered, permitted, certified to meet the minimum standard of operation and that they report all their input / output volumes quarterly.

This could reduce the bureaucratic burden created by the transborder shipment regulation, which is good for hazardous waste, but which should not be applied for intra EU WEEE shipments under the conditions described in this paper.

By this action the minimum quality of the complete "supply chain" of WEEE can be ensured across all EU and an open EU market for WEEE treatment and recycling can be achieved. This will promote the development of technology, investment and will promote the resource recovery industry within the EU.





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