Overview of the WEEE, RoHS, and ElektroG Environmental Legislation

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Summary

The European Union enacted the *Waste from Electrical and Electronic Equipment* (WEEE) and the *Restriction of the Use of Certain Hazardous Substances* (RoHS) directives on 13 February 2003. This legislation focuses primarily on the reduction of damage to the environment arising from the use of certain hazardous substances in electrical and electronic equipment (EEE) and the waste from these products. On 23 February 2005, Germany integrated both directives into its own laws with the *Act Governing the Sale, Return and Environmentally Sound Disposal of Electrical and Electronic Equipment*, known as the *ElektroG*. The *ElektroG* establishes significant new responsibilities for companies wishing to sell their products in the German market. For most producers, establishing a clearinghouse as well as registration with the German federal government's official clearinghouse is now a prerequisite to selling EEE goods in Germany. Furthermore, firms producing such goods are responsible for the take-back, recycling and disposal of their products. The EU directives and the German law will thus have a major impact on companies exporting IT goods into the German and the European market and it is important for U.S. firms to familiarize themselves with them. The IT sector is one of the industries effected by the new law, in addition to products such as small and large household appliances, lighting equipment, electrical and electronic tools, toys, sports and leisure equipment, medical products, monitoring and control instruments, and automatic dispensers.

I. The Legislation

WEEE Directive

The directive's main aim is the avoidance and reduction of waste from EEE and the recovery, recycling and reuse of these products. The directive covers the following sectors:

- Large household
- Small household appliances
- IT and Telecom equipment
- Consumer equipment
- Lighting equipment
- Electrical and electronic tools (with the exception of large-scale stationary industrial tools)
- Toys, leisure and sports equipment
- Medical equipment
- Monitoring and control instruments
- Automatic dispensers.

Under the WEEE Directive, electrical and electronic equipment is considered to be:

- Equipment dependent on electric currents or electromagnetic fields in order to function.

- Equipment for the generation, transfer and measurement of such currents and fields designed for use with a voltage rating not exceeding 1000 volts for alternating voltage and 1500 volts for direct voltage.

- Equipment that cannot fulfill its primary function without electric current is considered EEE. If electricity is used only for support or control functions, then the equipment is not considered EEE (i.e. a child's doll with batteries, a gas cooker with electric clock).

The WEEE Directive places considerable new responsibilities on producers. Producers are now required to finance the take-back and recycling of the waste from the EEE they manufacture.

The directive defines a producer as:

- Manufacturers who sell their products under their own brand.
- Resellers who sell equipment produced by another supplier under their own brand name.
- Importers of EEE to the member states

The rules governing producers' responsibilities are scheduled to take effect on 13 August 2005. The details of these responsibilities are enumerated in the section II.

RoHS Directive

The RoHS prohibits the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE) in the production of EEE from July 1, 2006 onwards. The definition of a producer is the same in both the WEEE and RoHS Directives.

The aim of the RoHS Directive is to harmonize the laws within the EU member states on the use of certain hazardous substances, the restriction of their use in production, and the safeguarding of public health. The RoHS directive is a single market directive and will therefore be enforced in the same manner across all EU member states.

German Legislation

With the aim of integrating EU legislation into national law, Germany passed the *Act Governing the Sale, Return and Environmentally Sound Disposal of Electrical and Electronic Equipment*, known as the *ElektroG,* on March 23, 2005.

The *ElektroG* is an amalgamation of the WEEE and RoHS directives, according to which producers must coordinate a take-back system by setting up a clearinghouse. In addition, they are required to register with the official German clearinghouse, the EAR, and provide this agency with an annual financial guarantee. This guarantee would be used in case of insolvency to finance the waste disposal of products placed on the market by the producer after 13 August 2005.

II. Details of the *ElektroG* legislation

New Requirements for U.S. Exporters to Germany

To export to the German market, American manufacturers must comply with the *ElektroG* legislation, and so a detailed analysis of the producer's responsibilities under the new legislation is crucial. Although this report mainly focuses on the IT sector, these new responsibilities also apply to other sectors covered by this law.

Product Design

The *ElektroG* legislation stipulates that EEE should, whenever possible, be produced in such a way to allow easy its disassembly, recycling, recovery, and reuse. Producers are restricted from preventing the reuse of WEEE through specific design and production methods. Only when a product design offers distinct, extraordinary advantages to the producer is an exception allowed. Though this law does not outline what factors actually constitute an advantage, significant cost reduction, environmental considerations, and a lack of alternative production methods may be some legitimate reasons to produce goods in a way that prevents reuse of that product. The *ElektroG* legislation does not outline sanctions in the case of non-compliance with this clause.

Prohibited Substances

From July 1, 2006 on, new EEE on the market may not contain more than 0.1 percent of lead, mercury, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE) and 0.01 percent cadmium. This will affect product design in many sectors, including IT. There are some exemptions, such as security-infrastructure and spare parts. For example, producers of spare parts brought to the market before 1 July 2006 and are used specifically in the repair or reuse of a product do not have to comply with the substance restriction (RoHS).

This part of the law is a reflection of the RoHS directive. From July 1, 2006 onwards, the above-mentioned substances will not be allowed in production process in both Germany and in all EU member states. Although some other aspects of other national laws may differ from the EU legislation, it is expected that all of them will include a prohibited substances clause.

Clearinghouse

The *ElektroG* requires producers to establish a clearinghouse and recycling facility for administering their registration, product take-back, treatment and financial guarantee responsibilities, **in addition** to registering with the German federal government's clearinghouse *Elektro Altgeräte Register* (EAR) (www.stiftung-ear.de), a division of the German Environmental Protection Agency.

Unless they have established their own recycling facility, companies are responsible for finding a recycling subcontractor. This is a prerequisite for registration with the EAR. Information on recycling firms can be obtained from the Association for Secondary Raw Materials and Waste Disposal (http://www.bvse.de/home.html). Some large companies have already established partnerships and subcontracted WEEE take-back and treatment to a single recycling firm. One such partnership is between HP, Braun, Electrolux and Sony, known as the European Recycling Platform (http://www.erp-recycling.org). Other companies may be able to join this partnership. Philips, Sharp and Löwe founded a similar association. *Elektro-Geraete Recycling GmbH* also focuses on WEEE recycling (http://www.egr-online.de).

WEEE take-back and treatment requirements depend on whether a business falls under the legislation's definition of a 'producer', however. The *ElektroG* defines a 'producer' in almost the same manner as the WEEE directive, but with an additional clause on importers. The law classifies an importer that imports a product into the German market for the first time as a producer and such importers are required to register with the EAR and fulfill all the necessary requirements as producers.

	⇒ Importer/distributor placing a product on the German market for the first time
'Producers' as defined by the ElektroG required to register with the EAR:	⇒ Manufacturer in Germany who sells its products under its own brand name
	⇒ Foreign subsidiary located in Germany selling its products on the German market
	⇒ Reseller who sells a product under its brand name although another manufacturer produces it

There are three main prerequisites for producer registration:

- Having a legal presence in Germany
- Proof of financial guarantee
- A local recycling partner (if the producer does not already have his/her own recycling facilities).

For registration, producers have to provide the following information to the EAR:

- Company name, contact person, commercial register number etc.
- Products sold by the company (product-category, consumer- or professional product etc.)
- Name and address of the recycling-company that serves the 'producer'
- Name and address of the institution covering the 'producers' annual financial guarantee for products brought onto the market

Under the *ElektroG*, American firms selling their goods through a German distributor are not required to register because the law considers the distributor to be the producer. However, they still have to comply with RoHS directive's substance restrictions and product labeling regulations. Distributors contacted by the FCS Germany stated they are planning to draft their business contracts such that the manufacturer bears all the financial responsibilities for WEEE collection and treatment.

Subsidiaries of American firms in Germany are, on the other hand, required to register with the EAR. The law also technically covers firms using e-commerce to export products and services into the German market, but there is a loophole. A firm operating from the U.S. cannot be forced to register in Germany, as German national law is not applicable to an American firm that does not have a legal presence in Germany. Therefore, American e-commerce firms do not have to register with the EAR and will not have a take-back responsibility. If they sell their products through a distributor in Germany, the distributor is responsible for take-back.

Furthermore, each month, firms are required to provide the EAR with an estimate of the tonnage of goods they will supply to the market in that month. Such information is necessary for administering take-back and treatment responsibilities based on each company's current market share in weight. Determination of the weight of a product can be complex, as only the parts of the products covered by this law can be included in the calculations. According to the EU's guidelines, batteries used in EEE are included in the determination of the collection target and should be weighted with the product, although they have to be separated after take-back and treated according to the EU legislation on batteries. The producer must provide this information separately for each group of goods it brings into the market (i.e. separate information for keyboards, printers, mainframes, etc.).

This aspect of the *ElektroG* will, in effect, change conventional business practices, as firms will be required to inform the clearinghouse about the amount of goods they will put in the market in the upcoming month, as opposed to the standard practice of announcing market share for previous quarters. In order to avoid any negative effects of this procedure on companies' competitiveness, the EAR is required to keep all such information strictly confidential.

Financial Guarantee

Each producer must provide an annual financial guarantee to the EAR for the B2C products it puts on the market after 13 August 2005. This guarantee is used in case of the company's insolvency to cover the take-back and disposal of the firms' EEE from private households. B2B products, however, do not require a financial guarantee.

This financial guarantee is important in financing so-called 'orphan waste'. Orphan waste refers to the waste from products brought into the market after 13 August 2005, but the producer of which is no longer active in the market. The take back and treatment of such waste will be financed via the guarantee that the producer provides when it is active in the market. The guarantee can be in the form of an insurance policy, a frozen bank account, or participation in a system to fund WEEE disposal.

The amount of yearly guarantee of a producer can be calculated with the following formula:

Amount of Guarantee (Euro) = Amount of goods (tons) x estimated take back quota (%) x estimated disposal cost (Euro/ton)

If a company puts 1000 tons of keyboards on the German market in a year and if the estimated take back quota is 70% and the estimated disposal cost is 500Euros/ton of keyboards, then the amount of guarantee is equal to 1000 x 70% x 500 = 350,000 Euro)

The EAR will release a document outlining the estimated take back quotas and estimated disposal costs. The estimated take back quota refers to the percentage of EEE sold that comes back to the collection points. A guarantee stays blocked until the estimated useful life of a product ends.

The following example illustrates how the guarantee system works. Assume that a keyboard has a life of 3 years, the estimated take-back quota is 70% and the estimated disposal cost is 500Euros/ton. In four successive years, a producer puts 1000, 2000, 1000 and 2000 tons of keyboards on the German market.

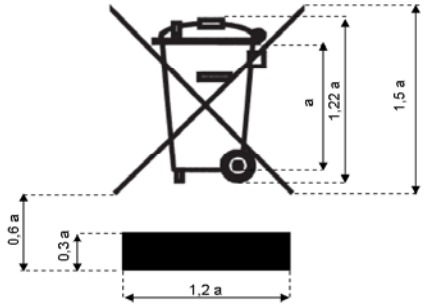
Year 1→ Guarantee responsibility is 350,000 Euro
Year 2→ Guarantee responsibility is 700,000 Euro
Year 3→ Guarantee responsibility is 350,000 Euro
Year 4→ Guarantee responsibility is 350,00 Euro and the 1st year guarantee is eliminated because the useful life of the 1st year's products ends in the 4th year.

Consultation from the EAR or an industry association is necessary to calculate the estimations. The practical application of financial guarantees has not yet been established and companies should keep themselves updated on the issue.

Labeling

After 13 August 2005, all 'producers' of EEE must label every export to the European market to show market entry after this date. Furthermore, consumer products must be

marked with the special sign, called 'The Wheelie Bin", illustrated below, indicating that it was placed on the market after 13 August 2005 and requires separate collection.



The *ElektroG* provides a transitional period for the implementation of the new labeling. The new labeling regulations will not become binding on the German market until 23 March 2006, the date when the take-back systems will be operative. Products can be labeled as described above before this date, but the labeling will not be enforced until the 23rd of March.

B2B products in Germany have to be labeled as well, according to the EU Commission's guidelines. A product can only be classified as B2B in Germany with permission from the EAR. If a product is sold to a business, but it can still be passed on to consumers, such a product is not considered B2B. (i.e. computers sold to a firm which can still be sold in the second-hand market to the consumers).

The guidelines for determining whether printing and copying devices are B2B products are as follows:

- If product weighs over 35 kg. it is considered B2B.
- If a product weighs under 35kg but able to print a minimum size of A3 it is also considered B2B
- If a product weighs under 35kg but is leased and not sold, it is also considered B2B.

In order to be certain, producers should consult the EAR whether their products can be categorized as B2B.

There are three different aspects of labeling.

- The producer' s identification
- The date the product's market entry
- The crossed-out wheelie waste bin

The producer's identification and the date must be visible on every product irrespective of its B2C or B2B classification. The crossed-out wheeled waste bin will not be obligatory for B2B products. However, if a producer of B2B products wants to use the European standard for product labeling (EN 50419), then this producer has to use the crossed-out wheelie bin as a label as well because the European standard labeling combines the crossed-out wheeled waste bin and the date in one symbol.

Collection, Take Back, and Treatment

The most striking new obligation for producers is the requirement to take responsibility for the whole life cycle of their products. Producers are now responsible for the take-back, recycling or disposal of the waste from their products, as well as for the financing of all of these procedures. As already noted, the producer, according to the *ElektroG*, is not necessarily the manufacturer. Any company responsible for registering with the EAR in Germany is also responsible for the take-back and treatment of its WEEE, and must cover the costs related to its recycling or disposal.

The EAR coordinates the take back system. It informs a company or its recycling-partner who has to pick up and process a certain bin in a certain location (mandatory for all ca. 1.500 collection points in Germany) when it is the time to collect WEEE. As the responsibility of take-back is directly related to the amount of products on the market (in tons), a producer that has a bigger market share in tons will have greater take-back responsibilities. Therefore, this producer, or its recycling partner, will be collecting waste more often than a smaller firm.

The responsibility for collecting WEEE from private households depends on the so-called 'historic waste' and 'new waste' differentiation, which takes effect on 13 August 2005. Waste from products brought to the market before this date is considered historic waste. For historic waste, producers selling their products in the market on the day when the waste is created are collectively responsible for collecting the waste from private households (even if they were not active in the market when the good was brought to the market). End-users are responsible for collecting historic waste from B2B products. Producers and end users may contractually agree that the producers collect and/or recycle historical B2B waste, but technically the financial responsibility for historical B2B waste rests with the end-user.

With regards to 'new' B2C waste, i.e. waste from goods brought to market after 13 August 2005, municipalities will initially collect this waste from private households. Producers then take back the waste from collection points and recycle or dispose of it. Firms must subcontract their take-back and treatment responsibilities with a recycling firm or build their own recycling facilities. While the financial obligation for collecting the waste is on the producers, separate collection of WEEE is free of charge for private households. Producers of 'new' B2B waste are individually responsible for the collection, treatment and/or disposal of such waste and must carry the financial costs of doing so. However, it is permissible also in this instance for producers of B2B products to contractually arrange with end-users to share the costs of take-back and treatment of its waste.

The method for determining a producer's 'market share' for B2C WEEE before the 13. August 2005 is essentially the same as after the 13th of August, specifically the EAR calculates an "even temporal and spatial distribution of WEEE collection quotas among all registered producers on the basis of a scientifically recognized formula verified by an independent experts", according to the legislation. However, after the 13th of August 2005 producers then have a choice for how their share is allocated. Producers may then opt for their obligation to be based on either:

- Their verified share of clearly identifiable WEEE, calculated by sorting or application of scientifically recognized statistical methods, in the total quantity of WEEE according to equipment type.

- Their share of the total quantity of electrical and electronic equipment per type of equipment placed on the market in the previous calendar year.

Thus, producers may choose to claim individual or collective responsibility for collecting B2C WEEE. The EAR calculates the responsibility of each producer and informs them on the amount of WEEE to be collected. However, in practice, the individual waste collection will likely be difficult to administer.

In the case of B2B WEEE, collecting waste from their own products should not be problematic for producers, since they are technically required to collect the waste from the end-users. However, for B2C WEEE, it will be much more difficult for producers to claim individual responsibility waste from their own products from private households because the municipalities will initially collect this waste into bins and will not sort it by brand name. Therefore, collective take back programs might be a better option. Alternatively, a firm may claim individual responsibility for the waste from private households and ask the EAR to calculate its individual responsibility. The EAR must then consider the product quality of this firm, calculate the useful life of its product and determine the company's market share. In such a case, an environmentally friendly firm may benefit from this scheme, as its products' useful life is longer. However, the EAR will need information on how often a specific company's products come back, etc, and individual collection responsibility will therefore be difficult to administer, at least at the onset of the take-back system.

For firms that have only recently entered the market, claiming individual responsibility for B2C WEEE could be advantageous, as the amount of products sold and waste created will probably be low. However, as mentioned previously, claiming individual responsibility may not be possible in the beginning phase of the system for practical reasons.

Summary Table

	Producer's responsibilities for …	
Regulation	**B2C Products**	**B2B Products**
Requires financial guarantee to the EAR for waste collection	✓ Yes	**X** No
Requires labeling showing producer's ID and product's market entry date	✓ Yes	✓ Yes
Requires a Wheelie Bin Label	✓ Yes	**X** No, but required if using the European standard for product labeling (EN 50419)
Collection/treatment of historic waste	✓ Yes	**X** No – end user's responsibility (other arrangement between producer and end-user permissible)
Collection/treatment of new waste	✓ Yes	✓ Yes (other arrangement between producer and end-user permissible)

III. Effects on Trade, Production, and Sales

Volume of Trade

Increased costs resulting from compliance with the new legislation will almost certainly be reflected passed on to consumers in higher product prices and could possibly decrease demand. However, as many IT products have become indispensable parts of daily life, especially in business, demand for such products is expected to remain constant.

Many small and medium-sized businesses in the U.S are likely unaware of the new legislation and the responsibilities it entails. This situation could lead to many SMEs being forced to halt sales to the EU until they have complied with the new requirements. The market share of American SMEs in the European IT sector is small, however, and their withdrawal from the market would not lead to a significant change in the total value of U.S exports to the EU.

Product design

The main purpose of the European directives as well as the *ElektroG* is to compel manufacturers to manufacture products that can be easily dismantled, recovered, reused and recycled and as such supports environmentally friendly product designs. Firms may have an added incentive to alter their product's design if it allows for lower product recycling costs.

Business Practices

According to the WEEE directive as well as *ElektroG*, a firm bringing a product to the market for the first time, even if it is not the original manufacturer of the EEE, is considered a producer and has the obligation to register with the clearinghouse. For American firms with subsidiaries in Germany, the subsidiary is responsible for take- back and treatment of the waste.

However, for American firms using distributors to sell their goods in Germany, business practices may change. As distributors have the responsibility to take back and treat WEEE, they may renegotiate their agreements to include cost sharing with the US firm. It may even lead to some American firms choosing to open a subsidiary rather than dealing with distributors. Clearly, US firms that already have a subsidiary in Europe will be more aware of the new legislation and are consequently at an advantage over the companies that sell via distributors and agents.

IV. Useful Links

US Foreign Commercial Service – EU office WEEE web page
www.buyusa.gov/europeanunion/weee.html

US Foreign Commercial Service – Germany office WEEE web page
www.buyusa.gov/germany/en/weee.html

German Federal Ministry of Environment
www.bmu.de/english/waste_management/acts_and_ordinances/drafts/doc/6554.php

German Clearing House – EAR
http://stiftung-ear.de

English Translation of the ElektroG Legislation
http://www.bmu.de/files/pdfs/allgemein/application/pdf/elektrog_uk.pdf

Electrical and Electronics Industry Association – ZVEI
www.zvei.de

German ICT Association – BITKOM
http://bitkom.org

www.dti.gov.uk/sustainability/weee/index.htm

http://europa.eu.int/comm/environment/waste/weee_index.htm

http://www.weeenetwork.com

Krug-und-Petersen Government Consulting
(A book on the German ElektroG in English will be available for download soon.)
www.krug-und-petersen.de

For More Information

The U.S. Commercial Service Germany can be contacted via e-mail at: frankfurt.office.box@mail.doc.gov, website: http://www.buyusa.gov/germany/en/.

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