Electronics Takeback Laws: A Summary

(Excerpted from “Electronics Recycling: What to Expect from Global Mandates” 2002
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There are **11 countries that currently have “mandatory” electronics recovery laws on the books** today. They include Belgium, Denmark, Italy, Netherlands, Norway, Sweden, Switzerland, Portugal, Japan, and Taiwan. Recently, Korea’s Environment Ministry has published new takeback rules as well. China plans to crack down after the expose on poor working conditions in Guangdong Province for electronics recycling. There are extensive voluntary programs in a number of other countries, such as Germany, and draft takeback bills in several more.

Currently there are six countries with collections organizations set up, which require importers to pay fees on their electronics.

The European Union is moving quickly to enact two new directives on electrical and electronics waste (WEEE): One will require recycling of all kinds of electronics – the other will restrict certain hazardous substances in electronics. Once these directives pass (expected in 2003), it is estimated that there will be electronics takeback mandates in nearly 30 countries by 2007.

**EU WEEE Directives: What’s In them**

The European Union is posed to pass two directives on Directive on Waste Electrical and Electronic Equipment (WEEE) by 2003. It started as one directive, but controversy over whether it will be “minimum standards” (for WEEE takeback) or “harmonized” (as for hazardous material bans) prompted the Commission to split the directive in two in June 2000. A third directive on design was also added, though it never got out of the EC. Several member states are pushing ahead with their own programs, although others are content to wait and see what happens with the EU directives.

The two WEEE directives (one addresses takeback; the other, referred to as RoHS, restricts certain heavy metals in electronics, with exemptions) moved through Parliament in 2001, then the Council of Ministers (Environment ministers from the member states) amended them and sent back to Parliament for co-decision in 2002. The Parliament again made 45 amendments in April 2002.

**What’s IN the Draft WEEE Directive?**

The WEEE directive will require producers to set up systems for collection of electronics waste from households and other last holders. It requires the member states to collect 4 (some drafts
put it up to 6 kg) kg per person of WEEE by January 1, 2006, although targets will not be compulsory until more data is available.

The different bodies kept amending the recovery targets in 2001 and 2002. The last two sets available at press time are listed in the table

The definition of “electronics waste” is pretty broad – just about any product used by consumers or businesses with a plug or battery. In April 2002, the Parliament deleted the provision that would have included subassemblies and consumables, which are part of the products at time of discarding. It does not include various supplies such as toner cartridges,

<table>
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<th>2006 Recovery Targets; WEEE Draft 2nd Reading April 2002</th>
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<tbody>
<tr>
<td>Item</td>
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<tr>
<td>-------------------------------------------</td>
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<tr>
<td>Large HH appliances &amp; auto. dispensers</td>
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<tr>
<td>Small HH appliances</td>
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<tr>
<td>IT &amp; Telecom Equipment</td>
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<tr>
<td>Consumer Equipment</td>
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<tr>
<td>Lighting</td>
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<td>Elec. tools</td>
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according to RLI experts. The Council of Ministers broadened the scope a bit by adding at the end of each category a statement that any appliance that has the same characteristics as those listed (e.g. any machine for sewing, drilling, grinding, etc.) was also included. (See list end of this summary) The later drafts also added sports equipment to the list of covered items.

The draft originally allowed a five year grace period before companies would have to take back new equipment, and left the issue of collective or individual responsibility up to the member states. Moreover, the draft directive clarifies that although states cannot discriminate against companies that want to do individual takeback, companies are obligated to contribute financially to the system that applies to historical electronics waste in general.

The Council of Minsters draft had exempted small independent manufacturers with a turnover of less than 2 million/year and fewer than 10 employees for five years. However, the Parliament removed this exemption on second reading in April 2002. The only exemptions to WEEE directive are for national security and war equipment – but not regular military equipment.

It should be noted that while medical equipment is included in the directives, there are no recycling goals listed for it. The intent is that government give industry five years to develop a new infrastructure to take back the old equipment. The EC is supposed to then set mandatory recycling goals for medical equipment down the road.

Retailers: Retailers are not considered manufacturers unless they actually make the product. If
it is co-branding, then the electronics maker is responsible for takeback, according to April 2002 amendments.

Article 4 says member states shall set up systems for takeback for consumers free of charge, within 30 months after enactment. Companies can opt for individual or collective systems, and they must pay for historic waste. In the April amendments, MEP's left in a provision that allows member states to make producers pay for collection from households, but they rejected an amendment that would have forced industry to automatically pay for such collection.

ICI recovery: An original provision that would allow companies to negotiate who should pay for recovery with their business customers was rejected. Thus, producers will have to pay for recovery from their business and industrial customers as well.

The member states must collect 6kg per capita (though the Council of Ministers wanted to keep it at 4 kg). This is not mandatory at first, however.

Article 5 allows alternative treatment (other than regular recycling) for electronics as long as it protects human health. Observers say this may be a loophole for producers to burn a lot of WEEE instead of recycling it.

Design: Companies cannot design a product or consumable that cannot be reused or recycled (example: smart cartridges).

Orphan Wastes: To discourage new firms from going out of business and leaving liability to other producers, an amendment will require manufacturers to either join a collection organization, set up a blocked account, or pay a guarantee provision at import.

Exports: Exports of WEEE outside the EU will be very difficult – a member state can oppose export if the receiving facility does not meet technical requirements.

Member states may allow companies to place a “visible fee” on their products – since this is already in place in several countries.

Electronics must be marked with the crossed-out wheelie bin (as required on batteries). In addition, they must indicate that hazardous substances they contain. (See labeling section.)

Greece and Ireland will be given 24 extra months to comply with the directives because of their rural nature and lack of infrastructure.

Enforcement: A new amendment which requires member states to have an inspection and enforcement infrastructure in place may provide to be controversial in conciliation committee, observers say. If this passes, companies can expect more seizures at the border, as was the case with the Sony Playstations in the fall of 2001.

Pre-Treatment:

The WEEE directive requires that prior to recycling, certain items be removed, such as PCBs Mercury containing components, batteries, certain circuit boards, plastic containing brominated flame retardants, etc. The text says recycling shall not hinder re-use as a priority option.
RoHS Directive

The Directive on toxics (RoHS) bans heavy metals and some flame retardants (PBBB and PPBDEs) by 2008 in all covered electronics, with the following exemptions (according to the draft from the Council of Ministers, 6/2001) However, the date for enactment was moved up to 2006 from 2007 by April 2002 amendments by Parliament. Other amendments:

1. **Spare parts:** MEP’s reinstated an exemption to the RoHS for spare parts made before 2006. Consumables were taken out of the draft, which means that in the absence of any mention of these, it is unclear whether the directives will apply to them or not.

2. **Future bans:** A new amendment that will have the EU decide on prohibition on other hazardous substances, “and the substitution thereof by more environment-friendly alternatives which ensure at least the same level of protection from consumers.”

The follow exemptions to RoHS still stood as the directives went to the EC in spring 2002:

- Mercury in compact fluorescent lamps not exceeding 5 mg per lamp
- Mercury in straight fluorescent lamps for general purposes not exceeding
  - halophosphate 10 mg
  - triphosphate with normal lifetime 5 mg
  - triphosphate with long lifetime 8 mg
- Mercury in other lamps not specifically mentioned in this Annex
- Lead in glass of cathode ray tubes, [...] electronic components and fluorescent tubes
- Lead as an alloying element in steel containing up to 0.35% lead by weight, aluminium containing up to 0.4% lead by weight and as a copper alloy containing up to 4% lead by weight
- Lead in high melting temperature type solders (i.e. tin-lead solder alloys containing more than 85% lead),
- Lead in solders for servers, storage and storage array systems (exemption granted until 2010),
- Lead in solders for network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunication,
- Lead in electronic ceramic parts (e.g. piezoelectronic devices).
- Hexavalent chromium as an anti-corrosion of the carbon steel cooling system in absorption refrigerators.

*Deca-BDE’s may not be banned if the risk assessments come back favorable to industry in 2003.*

*It should be noted that there are no clear definitions of many terms – such as “recycling,” and “servers,” and this has designers in a quandary. Many of the definitions may end up being left to member states to sort out in their new legislation. This will take two years.*
Indicative list of products which fall under the WEEE directives:

1. **Large Household appliances**
   - Large cooling appliances
   - Refrigerators
   - Freezers
   - Washing machines
   - Clothes dryers
   - Dish-washing machines
   - Cooking
   - Electric stoves
   - Electric hot plates
   - Microwaves
   - Heating appliances
   - Electric heaters
   - Electric fans
   - Air conditioners
   - **Other large appliances used for cooking and other processing of food**
   - **Other large appliances for heating rooms, beds, seating furniture**

2. **Small Household appliances**
   - Vacuum cleaners
   - Carpet sweepers
   - Irons
   - Electrical knives
   - Coffee machines
   - Hair dryers
   - Tooth brushes
   - **Other appliances for cleaning**
   - **Appliances used for sewing, knitting, weaving and other processing for textiles**
   - **Irons and other appliances for ironing, mangling and other care of clothing**
   - Toasters
   - Fryers
   - Grinders, coffee machines and opening or sealing containers or packages equipment
   - Electric knives
   - **Appliances for hair-cutting, hair drying, tooth brushing, shaving, massage and other body care appliances**
   - Clocks, watches and equipment for the purpose of measuring, indicating or registering time
   - Scales

3. **IT & Telecommunication-Equipment**
   - Centralized Data processing:
     - Main frames
     - Minicomputers
     - Printer units
     - Personal Computing:
   - Personal Computers (CPU, mouse, screen and keyboard included)
   - Lap-top computers (CPU, mouse, screen and keyboard included)
   - Notebook computers
   - Note-pad computers
   - Printers
   - Copying equipment
   - Electrical and electronic typewriters
   - Pocket and desk calculators
   - User Terminals and systems
   - Fac-simile
   - Telex
   - Telephones
   - Pay telephones
   - Cordless telephones
   - Cellular telephones
   - Answering systems
   - and other products and equipment for the collection, storage, processing, presentation or communication of information by electronic means
   - User terminals and systems
   - and other products or equipment of transmitting sound, images or other information by telecommunication

4. **Consumer equipment**
   - Radio sets (Clock radios, radio-recorders)
   - Television sets
   - Videocameras
   - Video recorders
   - Hi-fi recorders
   - Audio amplifiers
   - Musical instruments
   - **And other products or equipment for the purpose of recording or reproducing sound or images, including signals or other technologies for the distribution of sound and image than by telecommunication**

5. **Lighting equipment**
   - Luminaires for fluorescent lamps with the exception of luminares in households
   - Straight fluorescent lamps
   - Compact fluorescent lamps
   - High intensity discharge lamps, including pressure sodium lamps and metal halide lamps
   - Low pressure sodium lamps
   - Other lighting or equipment for the purpose of spreading or controlling light with the exception of filament bulbs
6. Electrical and Electronic tools
Drills
Saws
Equipment for turning, milling, sanding, grinding, sawing, cutting, shearing, drilling, making holes, punching, folding, bending or similar processing of wood, metal and other materials
Tools for riveting, nailing or screwing or removing rivets, nails, screws or similar uses
Tools for welding, soldering or similar use
Equipment for spraying, spreading, dispersing or other treatment of liquid or gaseous substances by other means
Tools for mowing or other gardening activities
Sewing machines

7. Toys
Electric trains or car racing sets
Hand-held video game consoles
Video games
Computers for biking, diving, running, rowing, etc.
Sports equipment with electric or electronic components
Coin slot machines

8. Medical equipment systems (with the exception of all implanted and infected products)
Radiotherapy equipment
Cardiology
Dialysis
Pulmonary ventilators
Other appliances for detecting, preventing, monitoring, treating, alleviating illness, injury or disability
Nuclear Medicine
Laboratory equipment for in-vitro diagnostic
Analizers
Freezers
Measuring, weighing or adjusting appliances for household or as laboratory equipment

9. Monitoring and control instruments
Smoke detector
Heating regulators
Thermostat

10. Automatic Dispensers
Automatic dispensers for hot drinks
Automatic dispensers for hot/cold, bottles/cans
Automatic dispensers for solid products
Automatic dispensers for money
All appliances which deliver automatically all kind of products
**Design Directive**

A third directive, on electronics design, was also introduced, with a second draft issued in October. It specifies provisions for the design (but not, in the second draft, manufacture) of electrical and electronics equipment, and requires a conformity assessment and marking to show that the product has gone through the process. This “environmental assurance” would function much like the “essential requirements” of the packaging directive, requiring documentation of assessment procedures. Observers are not sure this directive has a chance of passing at the EC. Some say its fate could ultimately rest on what happens to the “essential requirements” for packaging.

The electronics directives will cost industry billions more - on top of the billions spent on the packaging directive. Just finding alternatives to lead solder will mean a multi-million-dollar redesign effort that must be coordinated worldwide. Technical experts say they can find no real environmental improvement in banning the lead and cadmium, as the amounts are so small. Major opponents of the electronics directives have been European appliance association Orgalime and the American Electronics Association (AEA), in addition to the Japan Business Council Europe. Moreover, there is a small group of large companies that want the opportunity to do individual takeback so they can benefit from their own “design for environment” initiatives.

**ANALYSIS:** If you look closely at what the Council of Ministers passed in 2001, then review the new amendments in April 2002, you will (after much study!) get some sense of how these directives might come out in the wash in 2003. Designers searching for some certainty will notice there are no real changes in the exemptions to the RoHS directive – but the MEP’s did indicate they might not be banning more materials if there alternatives are no more environmentally friendly. What could be costly to industry is the new clarification that it must also pay for recovery of all equipment from commercial and industrial customers as well.

It will be interesting to see what happens in conciliation committee on enforcement. Currently, most member states are NOT really enforcing the packaging directive! The new amendments would force this issue. On the one hand, such enforcement inspection at the border is costly and seems draconian – on the other hand, real enforcement might ensure there are fewer free riders, and that the full burden of enforcement will not be on the industry collection organizations.

Chris Pollet, a lobbyist with the Brussels law firm of White and Case (who represents Japanese interests) suggests it is possible the RoHS directive could be approved by the EC, which means it could become law before the WEEE directive.
Parliament Votes to Ban
Octa-, Deca- and Penta-BDE’s

(April, 2002 RLI)

EU Parliament members voted April 10 to phase out not only penta-BDE’s (a type of brominated flame retardant) by 2003, but deca-BDE’s and octa-BDE’s by 2006 as well.

The European Brominated Flame Retardant Industry Panel issued a statement that while it has accepted the proposal to phase out penta-BDE’s, (Used only in some foam furniture in the U.S.) they had hoped the EU would wait until risk assessments were completed first on the other two BDE’s.

The amendments to the draft directive (which amends Council Directive 76/769/EEC) would restrict these three BFR’s if they are more than .1% by mass of the product. The restriction on deca-BDE and octa-BDE’s would take effect in 2006, and would not go forward if the risk assessments showed there was not enough health risk.

The European Commission and Council of Minsters have not favored banning all of the BFR’s, only penta-BDE’s, but observers say these amendments are likely to be accepted by the EC for full passage.

The risk assessments for the other BFR’s are due soon, and industry is fairly confident they will show there is no real risk with using deca-BDE’, according to Gary Ter Haar, vice president of Health and Environment for Albermarle Corp., which makes BFR’s.

Meanwhile, provisions to restrict certain BFR’s in electronics remain in the Restrictions on Hazardous Substances (RoHS) Directive, (moving with the WEEE directive)though a proposed amendment to extend the ban to all parts of the products and not just plastic was defeated.