

**Waste electrical and electronic equipment (WEEE)**

# **INTRODUCTION TO WEEE**

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**Our challenge...**



A photograph of a warehouse interior. The floor is a reddish-brown color. In the background, there are several tall metal cages or racks. These cages are filled with various electronic equipment, including what appear to be old computer monitors and other electronic components. The lighting is somewhat dim, with a bright light source visible in the upper left corner, possibly a window or a large light fixture. The overall scene suggests a storage or recycling facility for electronic waste.

**WEEE**

**Waste**

**Electrical &**

**Electronic**

**Equipment**

# **WHY DO WE NEED LEGISLATION ON WEEE?**

**Reduce quantities of waste**

**More reuse and recycling**

**Efficient takeback systems**

**Environmentally sound  
products**

**Safe treatment of waste  
hazardous components**



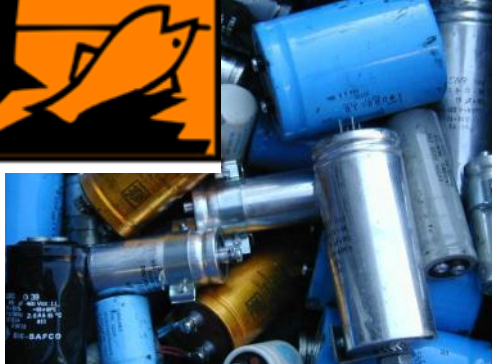


# **WHICH HAZARDOUS COMPONENTS ARE COMMON IN WEEE?**



- Mercury, other heavy metals
- PCBs
- Flame retardants
- “Greenhouse” gasses
- Asbestos
- “Cancer makers” (i.e. PAH)

**May poison people, animals, crops and nature, and damage DNA (heredity). Some will stay in nature for thousands of years if not correctly treated!**



**Because of PCBs, he may not be able to breed...**



# EU DIRECTIVE OVERVIEW



2012-19

**Waste electrical and  
electronic equipment  
(WEEE)**

Design for recycling, marking and  
product documentation  
Collection and treatment of waste  
products. Financing and organizing

2006-66

**Batteries and  
accumulators**

Banned substances, marking etc.  
Collection and treatment of waste  
products. Financing and organizing

## Product related legislation, i.e.:

2011-65

**RoHS**

Restriction of the use of certain hazardous substances  
in new electrical and electronic equipment

2011-65

**ErP**

Eco-Design and safety for energy-related products  
along the whole supply chain. Linked to the CE-mark

1907/2006

**REACH**

Regulation on chemicals and their safe use – Evaluation,  
Authorisation and Restriction of Chemical substances



# **WHICH LEGISLATION MUST PRODUCERS COMPLY WITH?**

**Industry & citizens must comply with national legislation – not the Directives**

**Member State decisions on:**

- legal requirements**
- penalties**
- enforcement authorities**



**Directives set the structure and requirements for the implementation into national legislation**

# DIFFERENT LEVELS OF IMPLEMENTATION REQUIREMENTS

## **Minimum Directive**

i.e. WEEE and battery directives

More ambitious legislation allowed in Member States (MS)

# BATTERY DIRECTIVE

## Avoid pollution through collection and recycling of batteries and accumulators



- Collection of at least 25% of the portable batteries by 2012, rising to 45% by 2016.
- All batteries collected must be recycled
- Restrictions on the use of mercury in all batteries and on the use of cadmium in portable batteries.



# BATTERY DIRECTIVE



- Ban on landfilling or incineration of automotive and industrial batteries.
- Recycling processes for different types of batteries must meet specified efficiency levels.
- Battery producers shall finance the costs of the collection, treatment and recycling of waste batteries

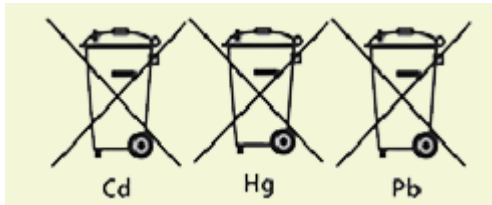


**Common collection schemes with WEEE possible, and could be recommended**

# MARKING REQUIREMENTS



All new electrical and electronic equipment (WEEE) and batteries shall be marked with the **crossed out wheeled bin**



Additional information in the product documentation

This is to indicate that scrapped equipment must be separately delivered, not thrown away together with other waste



# WHAT IS ECOLABELLING?



**Voluntary systems to help consumers to choose environmentally friendly products**

**Criteria based on environmental impacts. Producers must at least comply with the directives**

**Producers must apply for eco-labels, and show compliance with the demands & criteria**

**Follows ISO 14024 standard**





## European ecolabels for EEE

All EU Countries



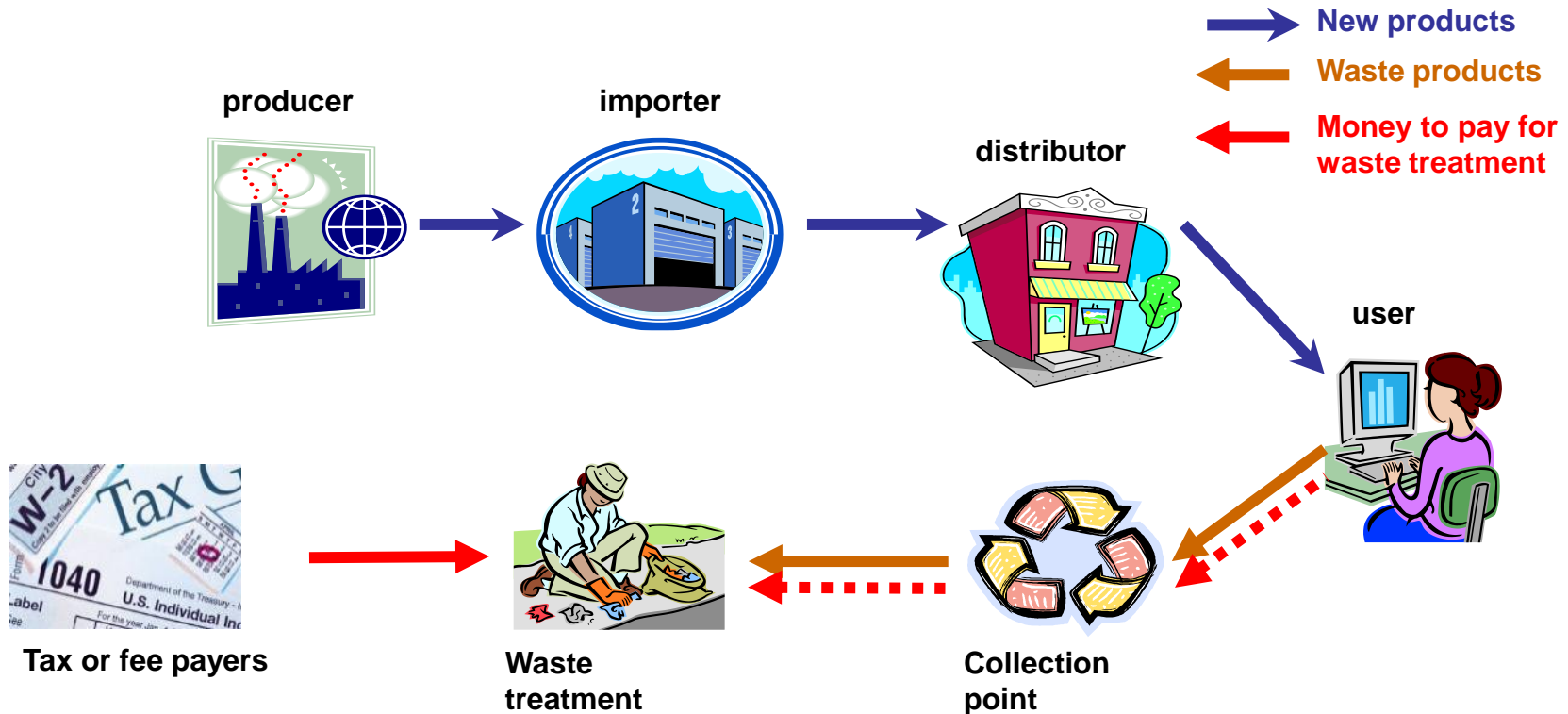
# **WHO WILL PAY FOR COLLECTION AND TREATMENT OF WEEE?**



**PRODUCER  
RESPONSIBILITY**

# TRADITIONAL WASTE SYSTEM

– Product & waste flow (simplified)



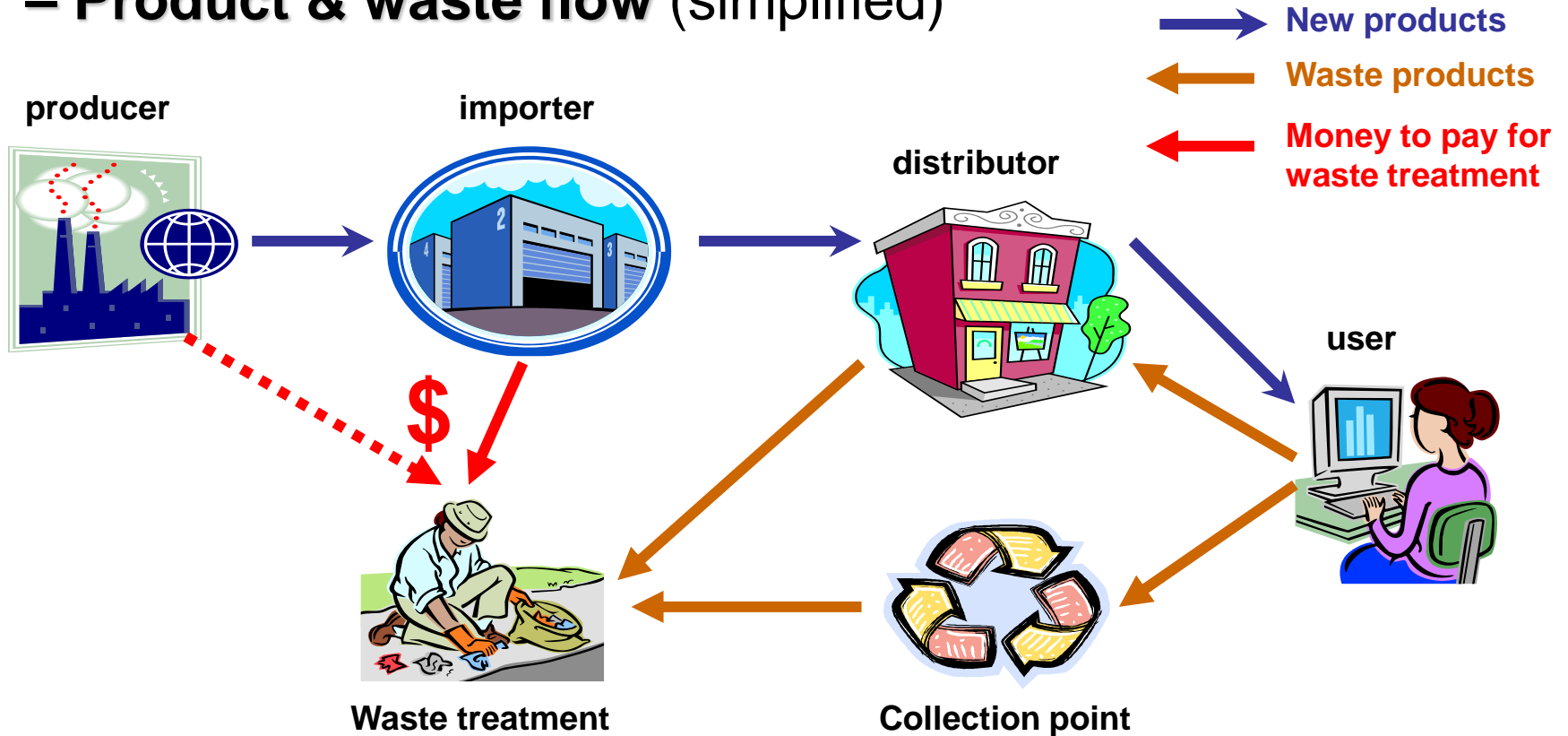
The waste owner or tax payers will cover the collection and treatment costs

These costs are not related to the product's price



# WEEE PRODUCER RESPONSIBILITY

– Product & waste flow (simplified)



**The producer/ importer must pay for the waste treatment**  
**These costs will be part of the product's price**

# **WHY PRODUCER RESPONSIBILITY?**

**“Buyers of new products pay, instead of everybody (tax), or those who legally deliver waste**

**Industry has freedom to organize their waste systems – often more effective**

**Incentive for more environmental friendly products, because Industry will have the waste costs. Successful products should therefore**

- be easy to collect**
- be easy to recycle**
- have less hazardous components**

**Required in EU Directives since 1994**



# WHO IS THE PRODUCER?

## In Macedonia:

- **Importers** who bring the products (EEE) into the country
- **Domestic producers**
- For Macedonian products with parts from abroad, the importer(s) and producer(s) together must fulfill the obligation

**The EU Commission (and Court) can act against member states.**

**Member states can only act within their own borders**



# REGSITER OF PRODUCERS

**In each member state**

**Producers, importers, distant sellers  
(authorised representative in each MS)**

**Online reporting required**

**Online communication with registries in  
other member states**

**Same type of registration for batteries**

**National statistics on**

- quantities placed on the market**
- collection data**
- data on re-use and recycling**

**Report to EU Commission every 3<sup>rd</sup> year**





# **PRODUCER RESPONSIBILITY ORGANISATIONS (PRO's) – TAKEBACK COMPANIES**



**Most producers & importers will never be able to fulfil Directive obligations on WEEE and batteries alone**

**Common collection schemes necessary**

- to collect money from producers and importers**
- to collect waste from shops and collection points**
- to organise proper treatment**



**Competitors can be member of the same PRO and/or buy services from takeback company**

# **WHAT SHALL OWNERS DO WITH SCRAPPED EQUIPMENT?**



**Consumers can deliver  
waste electrical and  
electronic products  
(WEEE) to collection  
points and/ or shops**

**Free of charge, with no  
obligation to buy new  
products**

**Also collection of  
business waste**

# REVISION OF WEEE DIRECTIVE



**Directive from 2002 revised in 2012:**

- **Wider scope**
- **Obligatory shop collection** (only smaller equipment, only larger shops)
- **Increased focus on re-use**
- **More ambitious targets for collection and recycling**
- **Clearer definition of producer in each Member state, authorised representative**
- **Restrictions on export/ shipment**



**This man  
needs  
help!**





# **TREATMENT PLANTS NEED INFORMATION FOR THE DISMANTLING**



**All producers shall**

- give information on all hazardous components, and where they are placed**
- give other useful information to promote reuse & recycling**
- mark the product with producer name and if the product is placed on the EU market (CEN standard)**

# **WHAT IS REQUIRED TO RUN TREATMENT PLANTS?**

**Treatment plants must be licensed by national authorities.**



**Quality / management systems as ISO 14000 are often required.**

**Treatment plants outside the EU must follow the same requirements. Export restrictions to ensure this**

# WHAT WILL THEY DO IN THE TREATMENT PLANTS?



- Remove liquids and hazardous components
- Send as much as possible for reuse or recycling, (minimum recycling rates in the WEEE Directive)
- Report quantities and recycling data

# **RECYCLABLE MATERIALS IN ELECTROSCRAP (WEEE), i.e.:**



- **Metals (for shredding)**
- **High value metals**
- **Glass**
- **Plastics**
- **Wood**
- **Reusable electronics & components**
- **Components suitable for incineration**

**Recovery targets (Art. 11, Annex V)**



# COMPONENTS TO BE REMOVED FOR SAFE TREATMENT & RECYCLING



WEEE Annex VII and the Battery Directive:

**Batteries – alone or in WEEE – for further treatment according to the Battery Directive, including removal of all fluids and acids, lead and mercury**

- **PCB's** (polychlorinated biphenyls)
- **Mercury** (i.e. in switches or backlighting lamps)
- **Printed circuit boards**
- **Toner and toner cartridges**
- **Plastic containing brominated flame retardants**
- **Asbestos**
- **Cathode ray tubes**
- **Potent greenhouse gasses** (CFC), HCFC, HFC, HC)
- **Gases that are ozone depleting**
- **Gas discharge lamps, incl. removal of mercury**
- **LCD's** (liquid crystal displays), with back lighting
- **External electric cables**
- **Refractory ceramic fibres**
- **Radioactive substances**
- **Electrolyte capacitors**
- **Cathode ray tubes (fluorescent coating)**

Thanks for your attention!

