

# SMART Group 7th Annual Lead-Free Seminar 3<sup>rd</sup> February 2005

## UK WEEE and RoHS legislation: Current status

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# The RoHS Directive & deadlines

European Union Directive 2002/95/EC “on the restriction of the use of certain hazardous substances in electrical and electronic equipment.”



-aka The RoHS Directive

[RoHS EUR-LEX link](#)

- A “single market” Directive which must be applied in full in all Member States.
- Article 9: “Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive before **13<sup>th</sup> August 2004...**”
- Article 6: “Before **13<sup>th</sup> February 2005**, the Commission shall review the measures provided for in this Directive...” – including possibly removal of current exemptions and adding to list of banned substances!
- Article 4: “Member States shall ensure that, from **1<sup>st</sup> July 2006**, new electrical and electronic equipment put on the market does not contain **lead**, cadmium...”



# RoHS Directive – brief details



- Restricts use of lead, mercury, cadmium, chromium(VI), and PBB/PBDE flame retardants in new electrical and electronic equipment covered by the Directive “put on the market” after 1 July 2006
- “Producer” responsibility – within the EU, any products you manufacture, re-sell under your own brand, or import or export, and the components that make up those products must comply with the stated requirements by the July 2006 deadline
- Certain applications and types of equipment are classified as exempt, but these exemptions will be reviewed and it cannot be assumed these will remain.

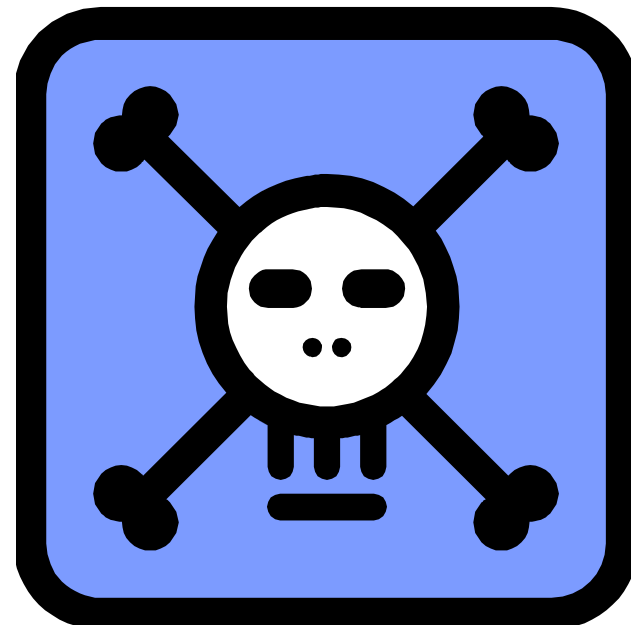
# RoHS Directive – Scope

## ... Or what's in?

Applies to equipment with operating voltages <1000VAC or <1500VDC

10 broad categories (intended to be illustrative only and not definitive) with 2 currently exempt from RoHS (status due for review Feb 2005):

- Large Household Appliances
- Small Household Appliances
- IT and Telecomms Equipment
- Consumer Equipment
- Lighting Equipment
- Electrical and Electronic Tools
- Toys, Leisure & Sports Equipment
- **Medical Devices (except implants)**
- **Monitoring and Control Instruments**
- Automatic Dispensers



# RoHS Directive – Exemptions



- Large stationary industrial tools
- Spares for repair, upgrade or re-use of equipment sold prior to the deadline
- Mercury in certain defined lighting applications
- Lead (oxide) in glass used for CRTs, electronic components and fluorescent tubes
- Lead used as an alloying element with steel, copper and aluminium to obtain specific metal properties
- Lead in high melting point solders (e.g. CBGA balls)
- Lead in solder used in manufacturing assembly of servers and storage systems and of network infrastructure systems
- Lead in ceramic materials used in electronic components
- Cadmium plating except for applications already banned under existing law
- Chromium(VI) specifically used for anti-corrosion properties in refrigerator cooling systems.

**BUT... It cannot be assumed that these current exemptions will continue to apply**



# RoHS Directive

## – future changes?



- RoHS Article 6 requires a review of existing scope and exemptions, and any newly proposed exemptions, by February 13<sup>th</sup> 2005
  - ERA Technology carried out a review under contract for the Commission and annex exemption modifications were voted on and approved by TAC on Dec 10<sup>th</sup> 2004 and will be formally published in early 2005
  - New EU stakeholder consultation ending February 11<sup>th</sup> 2005 gives 22 newly proposed exemptions for a possible vote in Feb/March 2005.  
[http://europa.eu.int/comm/environment/waste/rohs\\_consult.htm](http://europa.eu.int/comm/environment/waste/rohs_consult.htm)
    - » Consultation only, should not be interpreted as “... a political or legal signal that the Commission intends to take a given action.”

# RoHS Directive

## – New exemptions



- The ERA review allowed the following new exemptions approved by TAC
  - Pb used in compliant pin connector systems
  - Pb coated C-rings used for Thermal Conduction Modules used on large CPU devices
  - Pb & Cd in optical and filter glass
  - Pb in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a Pb content of more than 85% in proportion to the SnPb content
  - Pb used in solders to complete a viable electrical connection internal to Flip Chips.

# RoHS Directive

## – Proposed new exemptions



- Pb in tin whisker resistant coatings for fine pitch
- Pb bound in glass/crystal glass/lead-crystal glass; Cr and Cd <2% as colouring in glass used in EEE
- Cr and Pb containing solders for specific applications
- Cr(VI) passivation coatings
- Pb in lead-oxide glass plasma display panels
- Pb in connectors, flexible circuits and flex flat cables
- Pb in lead-oxide glass in magnetic heads
- Cd in doping for optical fibre comms systems photodiodes (APDs); Pb in optical isolators
- Pb in sheath heater of microwaves
- Cd pigments except those already banned
- Lead halide used in professional UV high intensity discharge lamps; Pb activator (< 1%) in fluorescent powder for special purpose discharge lamps; Pb in amalgam used in discharge lamps; Hg-free flat panel lamps; Pb in glass envelope of special purpose black-light-blue lamps
- Pb in low melting point alloys
- Galvanised steel used in EEE containing <0.4% unintended Pb
- Pb and Cr(VI) used in parts used in leased office equipment
- Cd in sulphide photocells
- Pb, Hg, Cd, Cr(VI), PBBs and PBDEs in EEE in aeronautic/aerospace high safety applications





# The WEEE Directive & deadlines

European Union Directive 2002/96/EC “on waste electrical and electronic equipment”



- aka The WEEE Directive



[WEEE EUR-LEX link](#)

- Not a “single market” Directive – specifies minimum objectives only, unlike explicit mandatory measures in RoHS
  - *Possibly different requirements in different member states!*
- Requires all Member States to have transposed the requirements of the Directive into force through national laws by **13 August 2004**
- Systems to be in place by **13 August 2005** and all products made after that date must be identified
- Member states must ensure that by **31 December 2006**, targets for collection, re-use/recycling, and recovery have been met.
- Concept of “producer” (polluter) financing end-of-life disposal costs

# WEEE Directive – brief details



- Requires producers to be responsible for financing the disposal costs of their equipment when it reaches the end of its normal useful life – hence “the polluter pays.”
- Cost included are those associated with collection, appropriate treatment, and meeting specified targets for re-cycling, recovery and re-use.
- Requires producers to adopt approaches to improve sustainable design and re-cycling, and encourage re-use at the end of the product’s life
- Applies not just to new products, there is also collective responsibility for all equipment already on the market and covered by the Directive

# WEEE Directive – Scope

Applies to equipment with operating voltages <1000VAC or <1500VDC

All 10 broad categories included:

- Large Household Appliances
- Small Household Appliances
- IT and Telecomms Equipment
- Consumer Equipment
- Lighting Equipment
- Electrical and Electronic Tools
- Toys, Leisure & Sports Equipment
- Medical Devices (except implants)
- Monitoring and Control Instruments
- Automatic Dispensers



# WEEE Directive – Exemptions



- Equipment intended specifically for military purposes or directly concerned with national security
- Large stationary industrial tools
- Household luminaires
- Filament light bulbs
- Photovoltaic products, such as solar panels
- Implanted or infected medical devices

**As with RoHS, it cannot be assumed that these current exemptions will continue to apply**

# WEEE & RoHS Directives

## – UK Government implementation



<http://www.dti.gov.uk/sustainability/weee/index.htm>

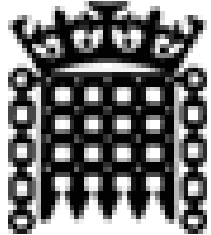
### 3 stage consultation process

- First stage discussion paper published March 2003
  - Discussion Forum hosted in WB screening room on May 15<sup>th</sup> 2003 for SMART Group with DTI in attendance
    - » DTI report published July 2003
- Second stage consultation paper published November 2003
  - » DTI report published April 2004
- Third stage consultation, draft legislation and draft non-statutory guidance documents published July 2004
  - » Discussion Forum hosted in WB screening room on Oct 15<sup>th</sup> 2004 for SMART Group with DTI in attendance
  - » Report on responses published November 2004



# WEEE & RoHS Directives

## – Implementation into UK law book



Note: Along with most other EU members, the UK missed the 13 August 2004 transposition deadline set in the Directives, but the implementation timetable is still being adhered to

### Transposition into UK Law

- Expected to take place early 2005 with 2 statutory instruments and companion guidance documents
  - » “The Waste Electrical and Electronic Equipment (Producer Responsibility) Regulations 2005”
  - » “The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2005”

# RoHS Directive

## – expected UK implementation details (1)

- Maximum Concentration Values (MCV) and definitions clarified, based on a draft decision released by the EU's RoHS Technical Adaptation Committee (TAC) in July 2004.
  - Submitted to Environment Council in Sept 2004 and after no formal response, then adopted by default in Dec 2004.
    - » Expected to be formally published early in 2005 by the EU.
  - up to 0.1% (1000ppm) by weight in “homogenous materials” for Pb, Hg, Cr(VI), and PBB and PBDE flame retardants
  - up to 0.01% (100ppm) by weight in “homogenous materials” for Cd

# RoHS Directive

## – expected UK implementation details (2)

### “Homogeneous material” means:

- a material, of uniform composition throughout, that cannot be mechanically disjointed (unscrewed, cut, crushed, ground, abraded) into other different materials
  - e.g.: a semiconductor package contains many homogeneous materials - plastic moulding material of the package, plating coatings on the lead-frame, the lead frame itself and the die gold-bonding wires – each separate material must be individually compliant with RoHS





# RoHS Directive

## – expected UK implementation details (3)

- Additional exemptions are assumed pending guidance from EC
  - products intended solely for military use or to protect national security
  - Spares exemption clarified to allow for capacity upgrade
  - products where the main power source is not electricity (e.g. gas central heating boiler exempt, but system thermostat is within scope)
  - products where the primary function does not require electrical or electronic components (e.g. musical greetings cards)
  - products that are part of equipment or a fixed installation that in itself does not already fall within the scope of the Directive, providing the product does not have a direct function outside of this usage (e.g. onboard aircraft lighting equipment.) **Note:- EC currently objects to this and instead proposed the new exemption for aeronautic/aerospace only**
  - batteries, either fixed or disposable (but WEEE still applies as does a new Batteries Directive!)

# RoHS Directive

## – expected UK implementation details (4)

- Demonstrating compliance
  - self declaration of compliance, but must be able to provide on request satisfactory evidence of product compliance in the form of relevant technical data which is regularly updated and re-assessed, e.g.
    - » supplier declaration records
    - » producer analysis of own end products
  - Producers are required to keep compliance data records up to 4 years after each product was placed on the market
  - Market surveillance and tests will be carried out to detect non-compliant product

# RoHS Directive

## – expected UK implementation details (5)



- Failure to comply

- Fines for non-compliance offence up to £5K on summary conviction, or unlimited fine if convicted on indictment
- Fines for failure to produce compliance documentation on request
- Where corporate body is at fault via consent, connivance or negligence of director, manager or similar officer, that person is deemed to have committed an offence in addition to the corporate body
  - » “Due Diligence” can be used as a defence where it can be shown all reasonable steps have been taken to guarantee compliance. Where an offence has occurred because of a third party, that third party can be held liable and prosecuted as though they committed the offence.

# WEEE Directive

## – expected UK implementation details (1)



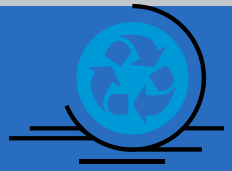
National Clearing House (NCH) is to be established with the following duties:

- **Producers** may fulfill their obligations under WEEE either individually or collectively via a **Compliance Scheme** - the NCH provides and administers a register of individual producers and compliance scheme collectives
- Recovers registration fees
- Maintains list of designated WEEE collection facilities
- Collects data from registrants and allocates WEEE responsibility based upon market share
- Correctly handles commercially sensitive data from producers
- Reports defaulting registrants
- Provides dispute mechanism and independent arbitration



# WEEE Directive

## – expected UK implementation details (2)



### Compliance Schemes:

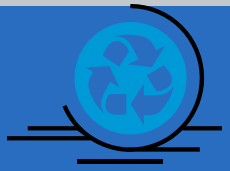
- Must arrange members' registration with the NCH
- Must themselves register annually with and be approved by relevant authority
- Should be expected to exist for 3 years min. and show plans to do so
- Provide required compliance evidence and data on behalf of its membership
- Assume members' obligations and responsibilities for WEEE, including any penalties for non-compliance
- Promote re-use and recycling

**Note: about 90% of companies affected by previous Packaging Waste Directive do so via a compliance scheme**



# WEEE Directive

## – expected UK implementation details (3)

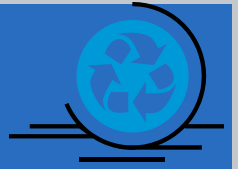


### Producer Responsibility:

- Individual producers/compliance scheme collectives must register with the NCH by August 13 2005 and annually thereafter
- NCH registrants must provide annual UK sales data each year from 2004 onwards (2004 figures to be provided by Aug 12 2005)
- Must finance allocated collection, recovery, re-use/recycling and disposal costs of own products when they reach the end of normal useful life.
- Must report evidence to NCH of WEEE treatment at authorised facilities and of meeting the specified recovery/recycling/re-use targets

# WEEE Directive

## – expected UK implementation details (4)

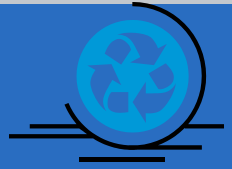


### Exemptions from scope:

- additional exemptions have been assumed pending guidance
  - products where the main power source is not electricity
  - products where the primary function does not require electrical or electronic components
  - products that are part of equipment or a fixed installation that in itself does not already fall within the scope of the Directive, providing the product does not have a direct function outside of this usage
- Note that each member state can interpret the scope of the WEEE Directive differently and so these exemptions apply only to UK

# WEEE Directive

## – expected UK implementation details (5)



### Business WEEE

- Different arrangements apply for WEEE from products sold to household users (retail), and those sold to business end-users (B2B)
  - For “future WEEE” – i.e. products supplied B2B after the Aug 2005 deadline – the normal producer responsibility applies, but producer and user can freely negotiate how to allocate future end-of-life costs during commercial transactions over B2B product sales.
  - For “historical WEEE” - i.e. B2B product supplied prior deadline - when it reaches end of life, if it is discarded by the business user and an equivalent replacement product is obtained from the producer, irrespective of whether they supplied the original product.
    - » But, if the product is discarded but no replacement procured, then the WEEE responsibility passes to the user.



# WEEE & RoHS Directives

## – Some Important Definitions



From the European Commission's "Blue Book"

"Guide to the implementation of directives based on the New Approach and the Global Approach"

### *"Put on the market"/"Placed on the market" and "Put into service"*

- the initial action of a **producer to make a product available** for the first time on the Community market, transferred from the stage of manufacture, with a view to distribution or use ("**put into service**") in the Community.
  - This refers to each individual product, not to a type of product.
  - All product destined for EU use in stock on July 1<sup>st</sup> 2006 and thereafter **MUST** comply.

### *"Making available"*

- Can be for payment or free of charge (but non-compliant is OK if only displayed at trade fairs, exhibitions and demonstrations, providing it is clearly marked as such!)

### *"Producer"*

- UK branch is a "producer" in respect of product placed on the market for UK customers and of product imported from non-EU branches for UK/EU customers.
  - Once products transfer from UK to your EU distributors, they become the "producer" in their country.



# WEEE & RoHS Directives

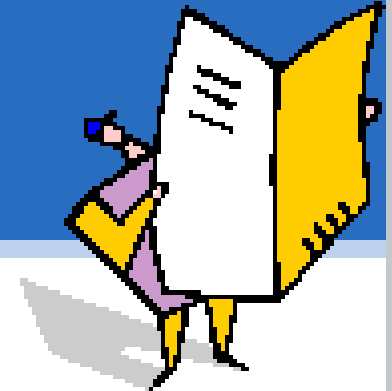
– So what do we need to be doing?

All our jobs depend on getting this right!



# WEEE & RoHS Directives

## – Get everyone involved!



### First steps

- Envirowise guide aimed at MDs and CEOs “Actions You Need To Take!”
  - <http://www.envirowise.gov.uk/envirowisev3.nsf/key/GG415>
- Envirowise guide aimed at marketing, design and operations executives
  - <http://www.envirowise.gov.uk/envirowisev3.nsf/key/GG416>
- Envirowise guide aimed at designers
  - <http://www.envirowise.gov.uk/envirowisev3.nsf/key/GG427>

### If you still can't sleep

- Read the Directives and the DTI Guidance documents



# WEEE & RoHS Directives – other countries respond?



E.g.

- Canada – as of **October 2004**, TVs, PCs and related equipment currently going into Alberta's landfills will be collected, reused, recycled
- China – draft regulations (proposed to be introduced in **Jan 2006!**) - “Management Methods for the Prevention and Control of Pollution from Electronics Information Products” (mirrors RoHS), also “Policy on Technologies for the Prevention of Pollution Caused by Waste Electrical and Electronic Products” (mirrors WEEE)
- Australia – although favouring a voluntary approach, it’s Government recommends implementing restrictions which “...mirror those adopted by the EU with the same or similar phase out periods.”
- USA - Californian Electronic Waste Recycling Act of 2003, just one of many state legislative measures similar to WEEE and RoHS.
- ***WEEE and ROHS Directives will impact the design, production and sale of electrical and electronic equipment all around the world, regardless of where the product is actually designed and manufactured.***

# More Directives – further work?

## Examples of other related new legislation



- EU Integrated Product Policy (IPP) & EUP Directive
  - EUP = “On establishing a framework for the setting of Eco-design requirements for Energy-Using Products”
    - » EUP at draft proposal stage but suggests this should become law in member states by 31st of December 2005, and manufacturers will be obligated to comply from the 1st of July 2006.
- Proposed revised Directive on Batteries and Spent Batteries
  - EU member states to collect and recycle all batteries, with the following targets from 2004: 75% consumer batteries collected (disposable or rechargeable); 95% industrial batteries collected; no less than 55% of all materials recovered from the collection of spent batteries will be recycled
    - » Was expected to be issued by the EC late 2004



# THAT'S ALL FOLKS!

## THANKS FOR LISTENING!



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