



WEEE and RoHS Basics, Update and Open Issues

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Outline

Section One	Background and Overview
Section Two	WEEE Directive
Section Three	WEEE Open Issues and Update
Section Four	RoHS Directive
Section Five	RoHS Open Issues and Update
Section Six	Final Thoughts



Notice

**This Presentation is for General Guidance
Only and Does Not Contain Definitive Advice**



Section One

Background and Overview



RoHS Directive Overview

- Restriction of Hazardous Substances
- Electrical and Electronic Equipment (EEE)
- Pb, Hg, Cd, Cr6+, PBBs and PBDEs
- Adopted, published and effective
- Industry must comply by July 1, 2006





WEEE Directive Overview

- Waste of EEE
- Recycling and recovery program
- Private sector manages and funds program
- Adopted, published and effective
- Must be up and running by August 13, 2005



Key European Union Institutions

- EU Commission
- EU Council
- EU Parliament
- EU Court of Justice



European Union Lawmaking

- Commission initiates, Commission and Parliament agree, and Council adopts
- Directives are binding only on Member States
- Member States must implement Directives into domestic law
- * This is where we are with WEEE & RoHS
- Regulatory flexibility of Member States is different for WEEE and RoHS Directives



So What? Why Should You Care?

- Penalties





So What? Why Should You Care?

- Penalties
- Import Bans



**Playstation
One**



So What? Why Should You Care?

- Penalties
- Import Bans
- Remaining Competitive





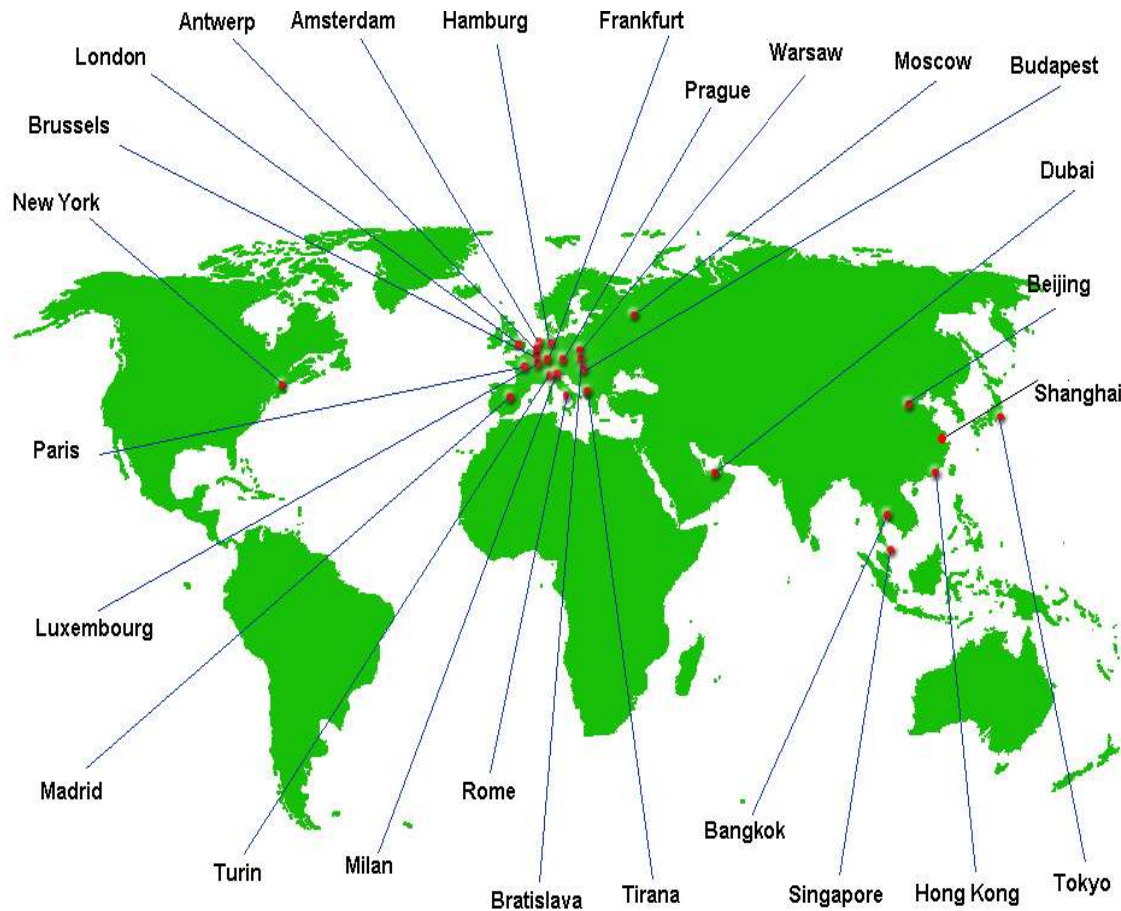
So What? Why Should You Care?

- Penalties
- Import Bans
- Remaining Competitive
- How much of your business goes to the EU?
- Spill-over effects





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- 2,400 attorneys
- 50 environmental attorneys
- WEEE and RoHS Product Team



Section Two

WEEE Directive



Categories and Examples of EEE Regulated Under the WEEE Directive

1. Large Household Appliances

Refrigerators
Washing Machines
Microwaves

2. Small Household Appliances

Vacuum cleaners
Toasters

3. IT and Telecommunications Equipment

Centralized Data Processing

Mainframes
Minicomputers
Printer units

User Terminals and Systems

Cellular telephones
Fax machines

Personal Computing

Personal computers
(CPU, mouse, screen & keyboard included)
Lap-top computers
(CPU, mouse, screen & keyboard included)
Printers
Copying equipment
Telephones



Categories and Examples of EEE Regulated Under the WEEE Directive

4. Consumer Equipment

Radio sets
Television sets
Musical instruments

6. Electrical and Electronic Tools

Drills
Saws
Sewing machines

8. Medical Devices

Pulmonary ventilators

10. Automatic Dispensers

Soft Drinks Machine

5. Lighting Equipment

Straight fluorescent lamps

7. Toys, Leisure and Sports Equipment

Electric trains or car racing sets
Hand-held video game consoles
Video games

9. Monitoring and Control Instruments

Smoke detectors
Heating regulators



Four Exemptions Under WEEE

1. EEE intended for military purposes
2. Large-scale stationary industrial tools
3. Implanted and injected medical devices
4. EEE “part of another type of equipment that does not fall within the scope” of the WEEE Directive

Issue: Which exemptions, if any, also apply to the RoHS Directive?



Producers

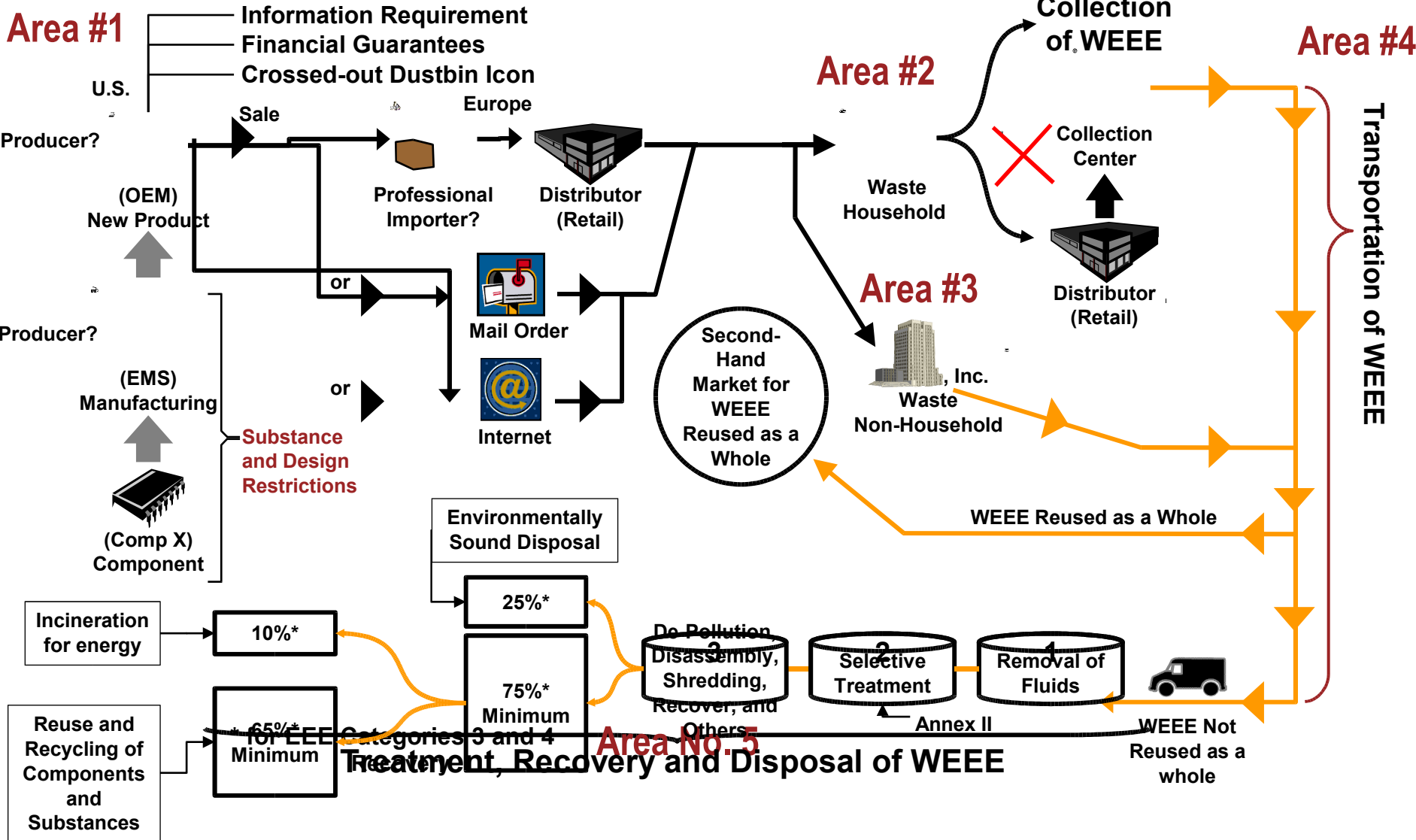
- WEEE applies to “producers”
- Three types of companies are “Producers”
 - manufacture and sell EEE under their own brand name
 - sell under their brand EEE manufactured by others
 - export or import EEE into the EU on a “professional basis”



Product Cycle

From EEE Manufacturing to WEEE Treatment

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Key Requirements of Producers

1. Register with each Member State
2. Information requirements
3. Design requirements
4. Financial guarantees
5. Financing the collection, treatment, recovery and disposal of WEEE (more on this later)



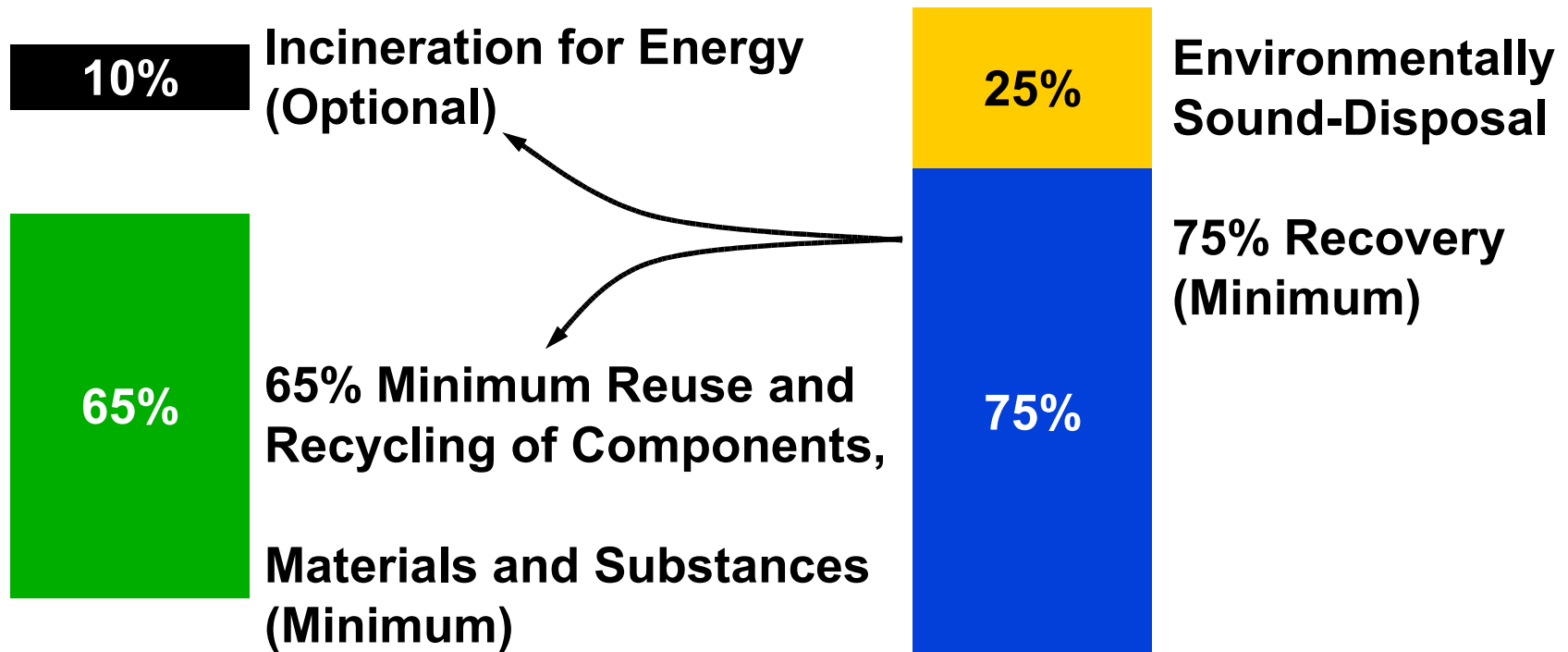
WEEE Directive Recovery, Reuse and Recycling Targets

WEEE		WEEE	
1. Total WEEE	100%	2. Total WEEE	100%
2. Reuse	15%	3. Reuse	15%
3. Recycling	85%	4. Recycling	85%



Recovery, Reuse and Recycling Targets

- Example for Categories 3 and 4





Financing Obligations *(as per Directive)*

- Collection, treatment, recovery and disposal
- Start August 13, 2005
- Private Household WEEE
 - Pre-Aug. 13, 2005: producer – market share
 - Post-Aug. 13, 2005: producer – “individual basis”
- Business WEEE
 - Pre-Aug. 13, 2005: user or producer – products being replaced
 - Post-Aug. 13, 2005: producer – “individual basis”
 - May enter into other arrangements



Section Three

WEEE Open Issues and Update



WEEE Update

- Member State focus
- Most Member States have missed the August 13, 2004 deadline
 - Exceptions include Greece, Belgium and Czech Republic
- But most have draft implementing legislation
- Preliminary review
 - Some concepts are still unclear (definitions)
 - Drafts clarify WEEE management options: collective v. individual
- Sometimes implementation appears inconsistent with Directive



Issue 1 – Covered Companies: WEEE

- Can there be more than one producer?
- Importation into one country and movement of goods within the EU?



Issue 2 – Scope of the Directive

- WEEE Annexes IA and IB - ambiguous at best
- Issue: are certain products excluded or included?
- TAC Guidance Document
 - General guidelines
 - Batteries
 - Ink cartridges
 - Relationship with ELV Directive
- Will Member States follow the guidance?



Issue 3 – Scope of Information Reporting Obligations

- WEEE Directive Art. 11(1)
 - Obligation on producer to report info to treatment centers
 - Must identify location of dangerous substances and preparations in EEE
- What material must be reported?
 - 6 banned substances?
 - RoHS Annex II substances?
 - References to Directive on Dangerous Substances and Preparations?



Issue 4 – Meeting WEEE Requirements *(Collection, Treatment, Recovery and Disposal)*

- Collective or individual compliance?
- EU-wide solution or Member State per Member State approach?
- Factors to consider include
 - Private household v. non-private household WEEE
 - Product types and value of WEEE
 - Key markets



Section Four

RoHS Directive



Covered Products – RoHS

- Applies to same EEE Categories as WEEE
- Exceptions (specific to RoHS)
 - EEE Categories 8 and 9 – medical devices, and monitoring and control instruments



Applications of Banned Substances Excluded under the RoHS Directive

1. Introduction
The RoHS Directive (2002/95/EC) restricts the use of certain hazardous substances in electrical and electronic equipment (EEE). The substances listed in Annex I of the Directive are:
- Hexavalent chromium
- Polybrominated biphenyls (PBBs)
- Polybrominated diphenyl ethers (PBDEs)
- Cadmium
- Mercury
- Lead
- Short-chain chlorinated paraffins (SCCPs)
- Organohalogen compounds (OHCs)
The Directive allows for exemptions for certain applications of these substances, provided that the exemption is justified on technical grounds and that the substance is not used in a way that would cause harm to the environment or human health.

2. Exemptions
The Directive provides for exemptions for certain applications of the substances listed in Annex I. The exemptions are based on technical grounds and are intended to allow for the use of these substances in certain applications where their use is essential for the performance of the equipment. The exemptions are listed in Annex II of the Directive.

3. Applications of Banned Substances Excluded under the RoHS Directive
The following table lists the applications of banned substances that are excluded under the RoHS Directive:

Substance	Application
Hexavalent chromium	Chromium(VI) compounds used in the production of stainless steel
PBBs	PBBs used in the production of certain types of electrical and electronic equipment
PBDEs	PBDEs used in the production of certain types of electrical and electronic equipment
Cadmium	Cadmium used in the production of certain types of electrical and electronic equipment
Mercury	Mercury used in the production of certain types of electrical and electronic equipment
Lead	Lead used in the production of certain types of electrical and electronic equipment
SCCPs	SCCPs used in the production of certain types of electrical and electronic equipment
OHCs	OHCs used in the production of certain types of electrical and electronic equipment



Applications of Banned Substances Excluded under the RoHS Directive

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RoHS Supply Chain Impacts

***Who will buy a non-compliant
product or component in
2006?***



Section Five

RoHS Update and Open Issues



RoHS Update

- Several technical issues still open and under review
- Focus still at the Commission and TAC
 - Positive: technical consultants are involved
- Whether (and to what extent) will the TAC and UK DTI set a trend or establish precedent



Issue 1 – MCVs (1)

- Dec. 5, 2003 Proposed Commission Decision
 - 0.1% for lead, mercury, Cr6+, PBB and PBDE
 - 0.01% for cadmium = same as current EU law (applicable only to some products)
 - By weight of “homogeneous materials” with short definition
 - No reference to intentional addition of banned substance



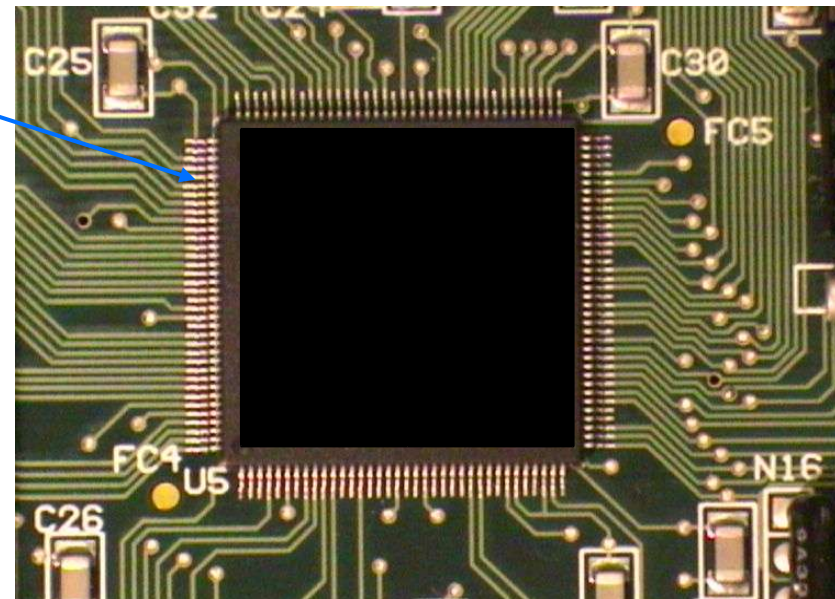
Issue 1 – MCVs (2)

- Homogeneous Materials Definition
 - Homogeneous material means a unit that can not be mechanically disjointed in single materials
 - “Homogeneous” means “of uniform composition throughout”, so examples of “homogeneous materials” would be individual types of plastics, ceramics, glass, metals, alloys, paper, board, resins and coatings
 - “Mechanically disjointed” means that the materials can be, in principle, separated by mechanical actions such as unscrewing, cutting, crushing, grinding and abrasive processes



Example by ERA Technology

- Quad-flat-pack IC
 - Tin/lead alloy (**a material**) with **15% lead** is used as coating on lead-frame
 - Lead is **0.09%** by weight of **component**





Issue 1 – MCVs (4)

- Draft decision was rejected - potential outcome?
 - Numbers
 - Homogeneous material definition
 - Intentional addition of banned substance?
- Risks
 - New consultation process
 - Greater uncertainty when compliance date approaches
- What certification should you ask from supplier?



Issue 2 – Commission Consultation on Application Exemptions (1)

- RoHS Directive Art. 5(1)(b)
- Stakeholder Consultation launched by EU Commission
 - Started early May 2004
 - Ended July 5, 2004
- Commission requests information on 13 exemptions, including
 1. Lead in solders for servers, storage and storage array systems and certain network infrastructure equipment
 2. Lead used in compliant-pin VHDM



Issue 2 – EU Commission Consultation on Application Exemptions (2)

- Commission Requests Information (cont'd)
 1. Lead in high-melting temp. solders and any lower melting temp. solder required to complete a viable electrical connection
 2. Lead in solders to complete a viable electrical connection internal to certain integrated circuit packages (flip chips) (until 2010)

- Results
 - 91 responses
 - No decision because “insufficient information”
 - Commission will wait until technical study by mid-October



Issue 3 – Compliance with RoHS

- How do you comply? How do you demonstrate compliance?
 - Within supply chain
 - To governmental authorities
- Compliance and enforcement falls within jurisdiction of Member State
- Potential approaches
 - Government Testing
 - Independent or company Testing
 - Certification
 - Self-declaration



Update – Commission

- Commission hired consultant to review these issues
- Self-Declaration
 - Every product “put on the market” is presumed to comply
- Producer’s responsibilities
 - Request declaration from each supplier
 - Review accuracy when in doubt
 - Focus on specific products
 - Focus on specific suppliers
- Enforcement
 - If challenged, producers would show enforcement authorities that have taken reasonable steps to comply



Update – UK Proposed Implementation

- Submit “technical documents” or “other information” showing that a particular product complies with substance ban within 28 days from a request by Government
- Document retention requirement of 4 years
- Statutory due diligence defense (consult your lawyer)
 - Show that he took all “reasonable steps” and exercised due diligence to avoid violating the substance ban
 - Must show that it was reasonable under the circumstances to rely on the information, having regard in particular



**UK RoHS Guidance
Document modified
by ERA Technology**



Issue 4 – Testing Procedures under RoHS

- Ensure uniform testing of EEE to determine RoHS compliance
 - Across supply chain
 - Across Member States
- International Electrotechnical Commission (IEC)
 - Advisory Group on Environmental Aspects
 - Working Group on RoHS Test Methods
- Unclear how IEC work will feed into the Commission or TAC work



Section Six

Final Thoughts



WEEE and RoHS Timeline

February 13, 2003	Directives become effective
August 13, 2004	Member States adopt domestic laws
August 13, 2005	(1) collection systems must be in place; (2) producers start financing; and (3) all products must be marked
July 1, 2006	Substance ban takes effect
December 31, 2006	Member States must meet 4 kg target (2008 for some accession Member States)



RoHS To Do List

- RoHS is first priority because it may lead to market exclusion
- Are your products covered?
 - Document analysis and conclusion
- Assess exposure
 - Ask suppliers whether they will comply
- Develop and implement compliance strategy
 - Involve others within company
 - Involve others outside company



WEEE To Do List

- Should start focusing on WEEE
- Technically easy but administratively complex
- Start gathering data on 2004 sales
- Consider available options
 - Individual basis
 - Join collective compliance schemes
 - Join governmental programs
- Registration starts January—August 2005



Thank You
