

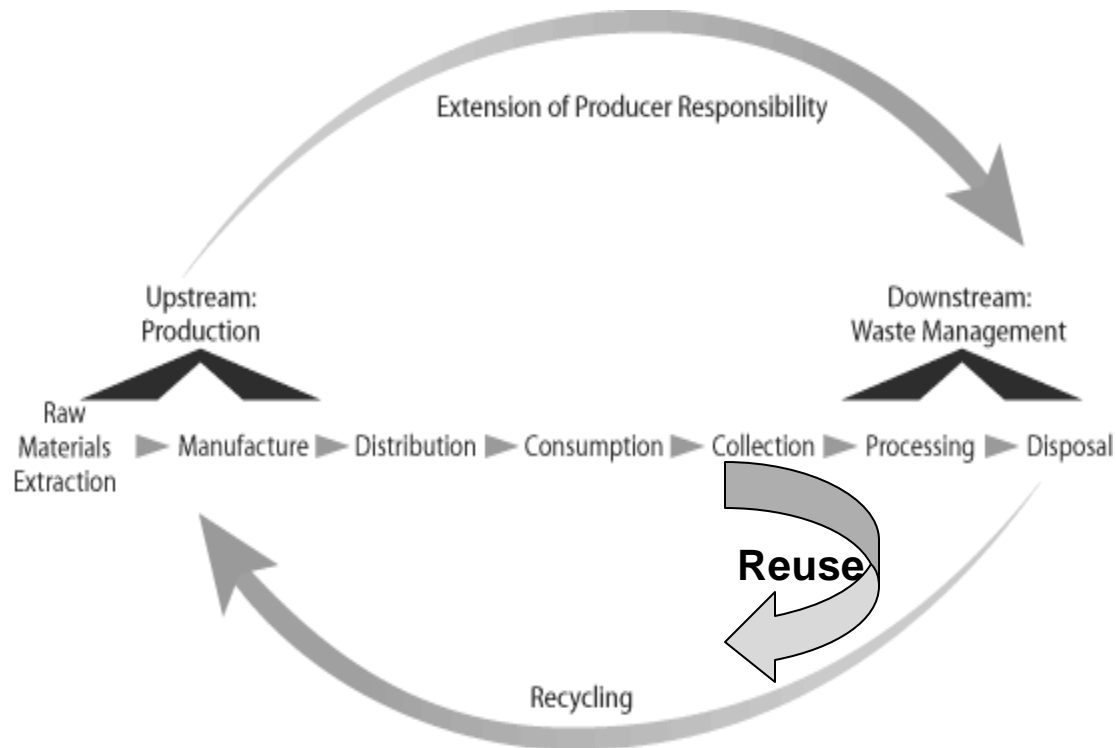
# Closing material cycles by closing product responsibility cycles

## **The Environmental Argument for Producer Responsibility**

30th November 2006

**GREENPEACE**

# From linear production-consumption to circular systems



# Closing Material cycles

- Designing out toxic substances – to ‘flush out’ the system of hazardous materials and enable closure of technical material cycles e.g. De-pollution requirements of Art 6 (1) and Annex II of WEEE Directive
  - BFRs in plastics
  - PWBs from mobiles and  $>10\text{cm}^2$
  - Hg containing components e.g. backlights

# Designing out Toxics

- OEMs need incentives and be rewarded for design improvements through lower end-of-life costs:
  - e.g. Substitution of BFRs should reduce end-of-life costs by enabling WEEE plastics to be fully recycled and saving on cost of high T° incineration (MBA Polymers uses hi tech to identify BFRs in WEEE plastics for high T° incineration)
- BUT, this requires **feedback of reduced EoL cost signal to individual producers that have designed out toxics**

# Requirements for EPR to drive design change

- Provision of true financial guarantees to ensure producers take into account EoL costs during design of products/product systems – both for individual, brand-limited and collective compliance systems
- Individual guarantees ensure producers taken into account EoL costs during design
- True guarantees ensure funds to pay EoL costs and provide flexibility and market competition to develop efficient solutions

# IPR 'Lost in Transposition' of WEEE Directive by MS

- No distinction between 'historical' and 'new' WEEE in 13 MS
- Insufficient financial guarantees favour collective systems – offering cheaper solution for legal compliance
- De-pollution and weight-based targets being weakened – distorting cost signals back to producers

# Beyond Recycling

- Sustainable production-consumption of EEE means not only closing materials cycles but also reducing **volumes** and **speed** of resource flow
- Importance of producer responsibility for total end-of-life costs – including collection

# Beyond Recycling – adapted from Stahel

Walter R, Product-Life Institute, Geneva, 1994

Increased Resource Efficiency	<b>Closing material loops –</b> Technical strategies	<b>Closing liability loops –</b> Marketing strategies
Reducing <b>volume</b> of resource flow	<b>Eco-products:</b> <ul style="list-style-type: none"><li>• Smaller, lighter e.g. PC</li><li>• Multifunctional e.g. combined fax/printer/scanner</li><li>• Standardisation e.g. Standard re-fillable printer cartridges</li></ul>	<b>Eco-marketing:</b> <ul style="list-style-type: none"><li>• Shared use e.g. Internet cafes</li><li>• Selling function instead of product e.g. Leasing of copiers</li></ul>

# Beyond Recycling

Increased Resource Efficiency	<b>Closing material loops</b> – Technical strategies	<b>Closing liability loops</b> – Marketing strategies
Reducing the <b>speed</b> of resource flow	<b>RE-manufacturing:</b> <ul style="list-style-type: none"><li>• Long life products</li><li>• Extending product life e.g. Upgrading PCs, copiers</li><li>• Extending life of components e.g. re-fillable printer cartridges</li></ul>	<b>RE-marketing:</b> <ul style="list-style-type: none"><li>• New products from non-hazardous waste e.g. Lignin-based (straw) polymers for PWBs</li><li>• Product life extension into new fields e.g. Swords into ploughs</li></ul>

# Beyond Recycling

Increased Resource Efficiency	<b>Closing material loops</b> – Technical strategies	<b>Closing liability loops</b> – Marketing strategies
Reducing the <b>volume &amp; speed</b> of resource flow	<b>System solutions:</b> e.g. Use of thin clients	<b>Systemic solutions:</b> <ul style="list-style-type: none"><li>• Selling results instead of goods e.g. out-sourcing</li><li>• Selling services instead of products e.g. IT services instead of hardware/software</li></ul>

# Future scenario without IPR

- Producers: 'business as usual' – no rewards
- Increasing volumes and speed of resource flow through partially-closed materials cycles
- Poor de-pollution standards: downcycling, contaminated recyclate & perpetuating toxic cycles
- More and more shorter life RoHS-compliant (only) products
- Municipalities organising WEEE collection financed by taxpayers; consumers paying for partial EoL costs in product price

# Future scenario with IPR

- Feedback from recyclers to producers to phase out toxic/problematic substances beyond RoHS e.g. PVC, all BFRs
- Cleaner materials = closed material cycles
- Toxic substances designed out – no de-pollution required
- Producers' financing of collection drives development of new marketing strategies