Industry Perspectives on Circular Economy
Electronics supply-chain

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Industry perspective: Overview

- Circular Economy policy framework
- Industry opportunities and concerns
- Industry Ecology relevance
EU will create mandatory policy framework

**EU Circular Economy Package**
[COM(2015) 614]

**Waste Framework Directive revision**
[2008/98/EC]

**Common principles for running of EPR systems, targets, reporting**

**Energy Related Products (ErP) Directive**
[2009/125/EC]

**Extended Producer Responsibility Directives**

**CENELEC material efficiency standards**

**Product specific ErP regulations**

**WEEE** [2012/19/EU]

**Packaging** [2015/720/EU]

**ELV** [2000/53/EC]

**Batteries** [493/2012/EU]

**Durability / lifetime**

**Reparability**

**Recyclability**

**First in line:**
- Enterprise servers and storage equipment
- Televisions and displays
- Games consoles
Industry see various opportunities:

- Harmonised design requirements
- Support for innovation and investment
- Enforcement to prevent illegal waste trafficking
- Ensuring EPR provides financial incentives for better design
- Providing common rules & guidelines for EPR schemes
- Improving accuracy of data on waste flows
- Boosting markets for secondary materials

Based on position of: DIGITALEUROPE
Industry have various concerns:

- Impossible to measure average product lifetimes
- Managing consumer expectation re. average lifetime
- Schematics and parts are proprietary
- Liability for quality & safety regarding repair instructions
- Design requirements not related to actual recycling issues
- Quantitative recyclability index is of little relevance

Based on position of: DIGITALEUROPE
IE research example: EPR costs can be better differentiated

<table>
<thead>
<tr>
<th>Compliance category</th>
<th>Product</th>
<th>UK</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small appliances</td>
<td>Household appliances with batteries</td>
<td>£0.00</td>
<td>£9.00</td>
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<tr>
<td></td>
<td>PCs &amp; games consoles</td>
<td>£0.00</td>
<td></td>
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<tr>
<td></td>
<td>Laptop (with mercury-free backlight)</td>
<td>(£250)</td>
<td></td>
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<tr>
<td></td>
<td>Laptop (with mercury backlight)</td>
<td>£80.00</td>
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<tr>
<td></td>
<td>Servers</td>
<td>(£75.00)</td>
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<td></td>
<td>Mobile phones</td>
<td>(£700.00)</td>
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<tr>
<td>Refrigerators</td>
<td>CFC refrigerator</td>
<td>£53.00</td>
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<td></td>
<td>Propane refrigerator</td>
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<tr>
<td>Displays</td>
<td>LCD with mercury backlight</td>
<td>(£80.00)</td>
<td>£94.00</td>
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<tr>
<td></td>
<td>LCD with mercury-free backlight</td>
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<tr>
<td></td>
<td>CRT screen</td>
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<tr>
<td>Large domestic appliances</td>
<td>e.g. microwave, dishwasher, washing machine</td>
<td>(£100.00)</td>
<td>(£45.00)</td>
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</table>


- EPR systems charge average prices
- ‘Real’ recycling prices can be substantial vs logistics costs: *Current WEEE recycling costs vary by six orders of magnitude* (-£700 to +£180)
IE leads and can help on many topics

- Evaluating new technologies
- Sustainable cities
- Life cycle assessment / foot-printing
- Eco-design
- Energy efficiency
- Industrial symbiosis
- Remanufacturing
- Waste management
- Resource use & efficiency
- Consumer behaviour
- Measuring environmental performance
- Business model / strategy evolution
- Extended Producer Responsibility
- Evaluating new technologies
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Industry perspective: Overview

- Circular Economy measures focused largely on electronics
- Significant opportunities exist; but industry impacts not fully considered
- Industry Ecology: A scientific approach is needed for future direction