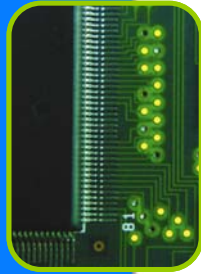


Responsible Management of Electronics

Jenny Stephenson
EPA, Office of Resource Conservation & Recovery
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Life Cycle Perspective



Graphic adapted from "Design Guidelines for Sustainable Packaging," Sustainable Packaging Coalition, GreenBlue, 2006



Why Consumer Electronics are an Issue

1. Rapid growth in the use & obsolescence
2. Energy use
3. Presence of toxic substances in many products
4. Opportunity to recover large amounts of embodied energy and valuable materials inherent in used electronics



Growth of Consumer Electronics

- Average US household has 24 electronic devices
- Last year, Americans purchased 500 million new consumer electronic devices



Consumer Electronics Association. *Trends in CE Reuse, Recycle and Removal*. April 2008



Growth of Consumer Electronics: Management of Discarded Electronics

- Increasing quantity: 220% increase in the number of electronics discarded from 1997-2007
- Consumer electronics comprise about 1.2% of the municipal solid waste stream

In 2007
2.25 million tons of discarded (used and end-of-life) electronics
1.8 million tons disposed (primarily in landfills)
414,000 tons collected for recycling

Recycling Rate
18% of TVs and computers
10% of cell phones

www.epa.gov/eycycling/manage.htm



Designing "Greener" Electronics

- Many efforts to find safer alternatives for toxic components and reduce the environmental footprint of electronics
- European Union Reduction of Hazardous Substances Directive (RoHS)
 - EPA Design for Environment
 - EPEAT



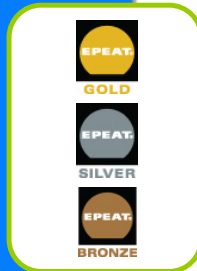
www.epa.gov/dfc



Designing Greener Electronics -- EPEAT

EPEAT – the standard for “green” electronics

- Includes criteria encompassing the product life cycle
- Enables institutional purchasers to easily identify environmentally preferable electronics
- IEEE Standard 1680



www.epeat.net



Use – Reduce Energy Consumption

Enable Energy Star features to reduce energy consumption

- Electronics account for 14% of home energy consumption



www.energystar.gov/homeelectronics

www.eia.doe.gov/consumption



End of Life

- Reuse extends the life of the product and helps bridge the digital divide
- Recycling recovers materials – metals, glass, plastics – reducing the extraction and processing of virgin resources
- Electronics Environmental Benefits Calculator

– estimates the environmental benefits of purchasing EPEAT, enabling energy saving features and reusing/recycling electronics



www.federalectronicschallenge.net/resources/bencalc.htm



Environmental Benefits of Recycling

In 2007, the US recycled 414,000 tons of electronics resulting in...

Greenhouse Gas Reductions:
974,000 MTCO₂E, equivalent to the annual emissions from more than 178,000 passenger vehicles.

Energy Savings:
18 trillion BTUs, equivalent to the energy content of 140 million gallons of gasoline.



Increasing Safe Reuse and Recycling

Efforts to improve management & increase the safe recycling of discarded electronics:

- Plug-In To eCycling
- Regulations
- 3rd party certified recyclers - Responsible Recycling Practices



Plug-In To eCycling

- A partnership with electronics manufacturers, retailers, & mobile service providers to increase public awareness of the importance of reusing & recycling (eCycling) used electronics and foster opportunities for individuals to eCycle
- Since 2003, Plug-In partners have collected more than 200 million pounds of consumer electronics



www.epa.gov/plugin



Responsible Recycling Practices (R2)

- Stakeholder effort to develop a robust set of practices.
- Sets a high “bar” for environmental and worker protection.
- As R2 gains footing in the marketplace, an increasing amount of used electronics will be managed by recyclers that adhere to sound practices.
- Some certified recyclers should be available late Fall 2009

www.epa.gov/epawaste/conservation/materials/ecycling/r2practices.htm



WHY R2?

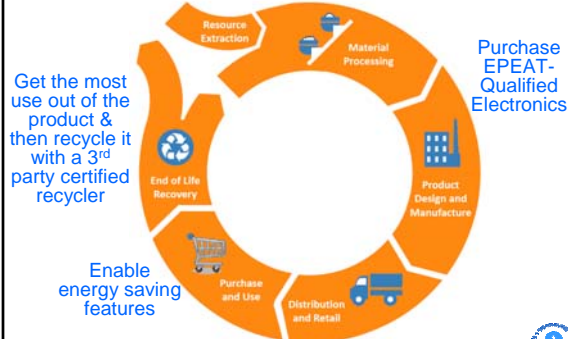
- Electronics recyclers want a way to highlight environmentally sound recyclers
- Purchasers want an easy way to find recyclers that use sound recycling practices
- EPA wants to increase SAFE electronics recycling

Essential “R2” Concepts

- Reuse and Recycling Required
- On-site Worker & Environmental Protection
- Downstream due-diligence (including export) for focus materials
- Evidence of Legality of Export & Import
- Comprehensive Management System
- Compliance with all Laws and Rules
- Destroy, purge or sanitize data from memory
- Track throughput and recordkeeping
- Store and transport materials securely and safely; and
- Possess insurance, closure plans and financial mechanisms to cover the potential risks of the facility.



Recap



Graphic adapted from "Design Guidelines for Sustainable Packaging," Sustainable Packaging Coalitions, GreenBlue, 2006



Thank You

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