

Green and Sustainable Computing

E-WASTE MANAGEMENT: A CALL FOR AN ENVIRONMENTAL PROTECTION

Group No: 5

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WHY E WASTE

- Radical changes in the field of Technology has Impacted the services of online banking, digital money transactions and thus making the market of electronics appliances expand while lifespan of these products became shorter.



WHAT IS E-WASTE

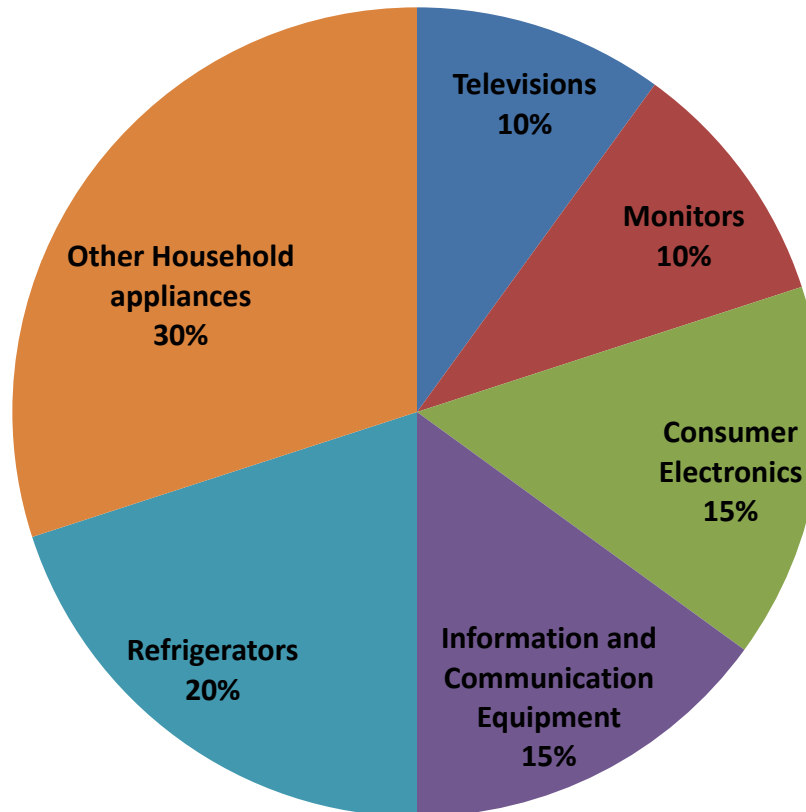
- Obsolete, expired, outdated- electronic products.
- Discarded by the users - refrigerators, air conditioners, cell phones, personal stereos, and consumer electronics to computers.
- Its the waste generated from used IT, Electronic and electrical appliances such mobile phone, laptop, computers etc. which are damaged or rejected and which are not useful any more and eligible for disposal or recycle



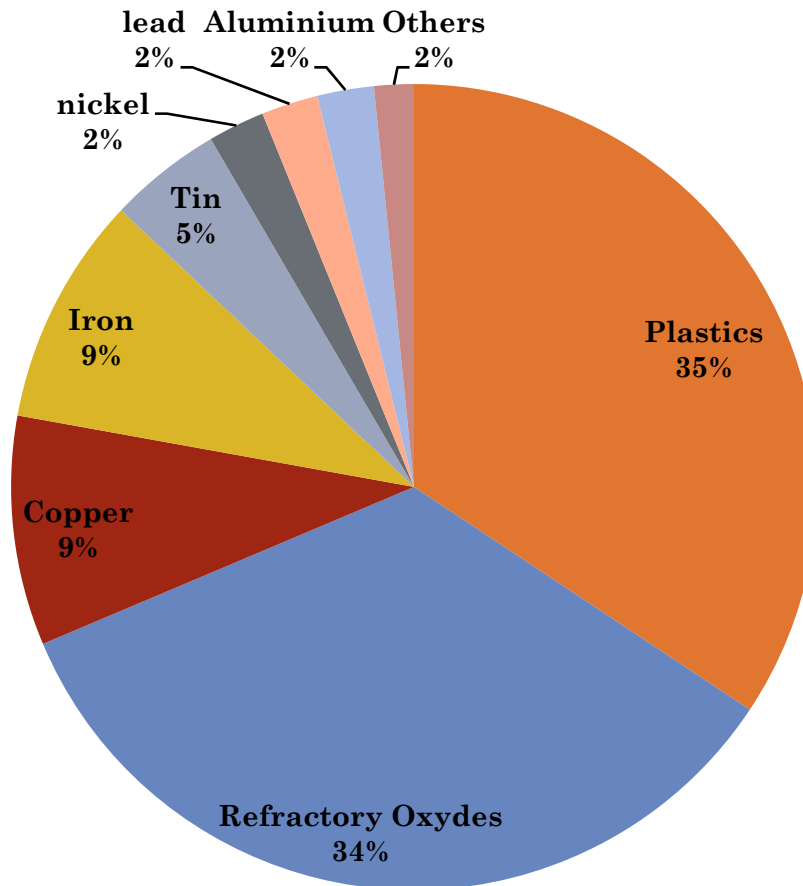


BAN investigator taking a soil sample along riverside where circuit boards were treated with acid and burned openly. Massive amounts of dumping of imported computer waste takes place along the riverways. Guiyu, China. (photo: BAN)

E-WASTE TYPE



E-WASTE COMPOSITION



FACTS ABOUT E WASTE

- Around 85% of the E-waste are being discarded around the globe which release toxic into the air
- Every year 20 to 50 million metric tons of e-waste are being disposed worldwide
- Out of the E-waste, only 12.5 % are being recycled
- To build one computer and monitor, it requires 539 pounds of fossil fuel, 48 pounds of chemicals, and 1.5 tons of water
- life span of computers are reduced from 6 years in 1997 to 2 years in 2005



HEALTH HAZARDS DUE TO E-WASTE

- Brominated Film retardants (circuit boards and plastic casings) do not break down easily and build up in the environment. Long term exposure can lead to impaired learning, memory functions, interfere with the thyroid and estrogen hormone systems.
- In 2004, 1000 tons of brominated film retardants – TBBPA – used to manufacture 674 million mobile phones – causes neurotoxicity.
- CRT tubes contains Lead, exposure causes intellectual impairment in children and can damage the nervous, blood and reproductive systems in adults.
- Cadmium in rechargeable batteries affects kidneys and bones.
- Mercury used in lightening devices for flat screens displays can damage the brain and central nervous system



WHO GETS THE TRASH?



Data sources: The World Bank, World Development Indicators, 2004; The Electronic Waste Guide; Global Action Network; Silicon Valley Toxic Coalition; Toxic Link India; SCOPE (Pakistan); Greenpeace China, 2002

- ❑ India -25000 workers in scrapping yards in Delhi
- ❑ 10-20000 tons of e-waste handled every year
- ❑ 25 % constituted computers only.



CURRENT CHALLENGES(DEVELOPING COUNTRIES)

- Lax rules and weak enforcement.
- Economic and social compulsions – adopt recycling as alternative labor.
- Business of e-waste dumping proliferated as a lucrative opportunity for e-waste dumping companies.
- E-waste industry proliferated, 1200 tiny companies generated revenue more than \$3 billions.
- 90% of hazardous waste found their way to developing countries through re-cycling loophole.
- In 2003, 23000 metric tones of grey market e-waste was illegally shipped to developing countries from UK.
- In 2005, 18 European sea ports, 47% of e-waste destined for export



RECOMMENDATION

- Strict International laws and governing body.
- Creation of products that can be upgraded to extend product life, improvement in energy efficiencies.
- Expansion of OECD (Organization for Economic Co-operation and Development), now only 34 countries – comprehensive legal framework for e-waste management system and better product designs.
- Basel Convention – Put an onus on exporting countries to ensure proper management of hazardous waste in import country. USA still not part and should be made part of this convention.
- Implementation of EPR (Extended Producer Responsibility) – manufacture responsible for waste



THANK YOU!

