Environmentally sound management of e-waste in India

WEF 2008

December 02, 2008; New Delhi

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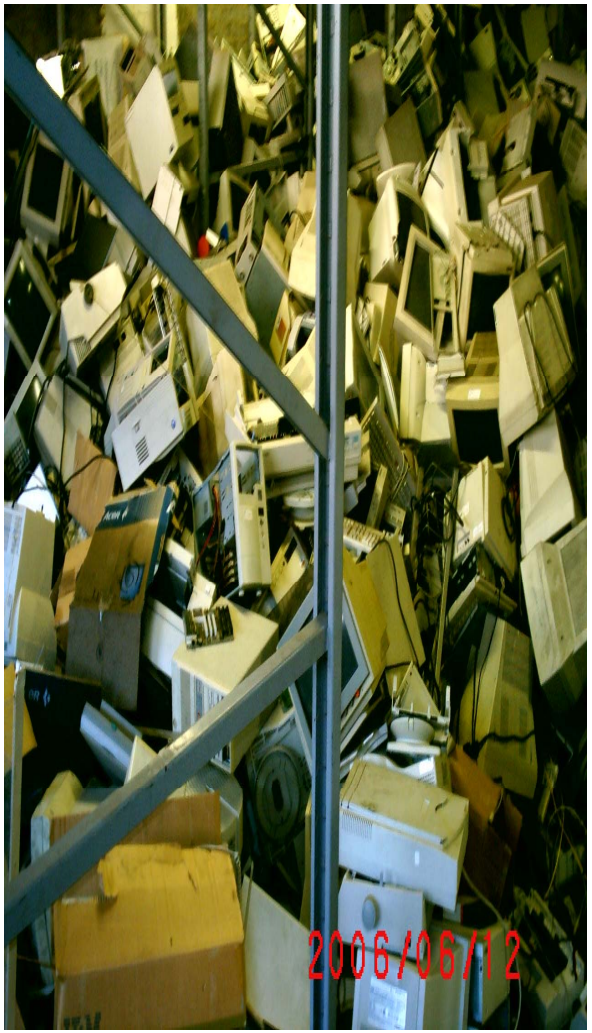
e-Waste

What is E-waste?

Electronic Waste (e-Waste) comprises of waste electronic/electrical goods which are not fit for their originally intended use. These include items such as computers, cellular phones, stereos, refrigerators, air conditioners, other consumer durables, etc.



Is e-Waste Hazardous?

E-waste is not hazardous waste per-se. However, the hazardous constituents present in the e-waste render it hazardous when such wastes are dismantled and processed, since it is only at this stage that they pose hazard to health and environment.

Toxic constituents in e-waste

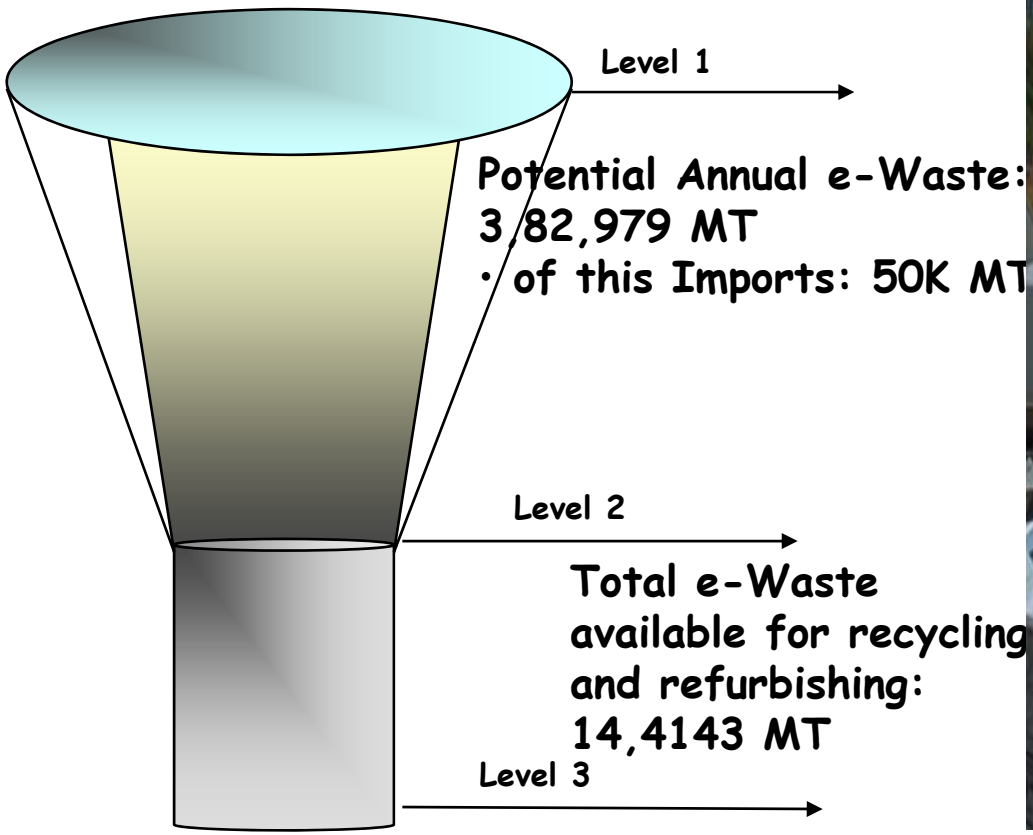
COMPONENTS	CONSTITUENTS
➢ Printed circuit boards	Lead & cadmium
➢ Cathode ray tubes (CRTs)	Lead oxide & Cadmium
➢ Switches & flat screen monitors	Mercury
➢ Computer batteries	Cadmium
➢ Capacitors and transformers	Poly Chlorinated Bi-phenyls (PCB)
➢ Printed circuit boards, plastic casings cable	Brominated Flame Retardant
➢ Cable insulation/coating	Poly Vinyl Chloride (PVC)

Growing EEE Industry in India

- Information and telecom fastest growing industry verticals
- PC sales crossed 7.3 million units in 2007-08 growing 16%; installed base of over 25 million units
- Consumer electronics market growing at 13-15% annually ; 120 million installed base of TVS
- Cellular subscriber up by 96.86% over last year; Indtalled base to cross 300 million by 2010

…fast growing consumption of EEE is leading to creation of e-waste

e-Waste generation in India: 2007



e-Waste Processed:19K MT

...470K MT by 2011

Source: MAIT-GTZ

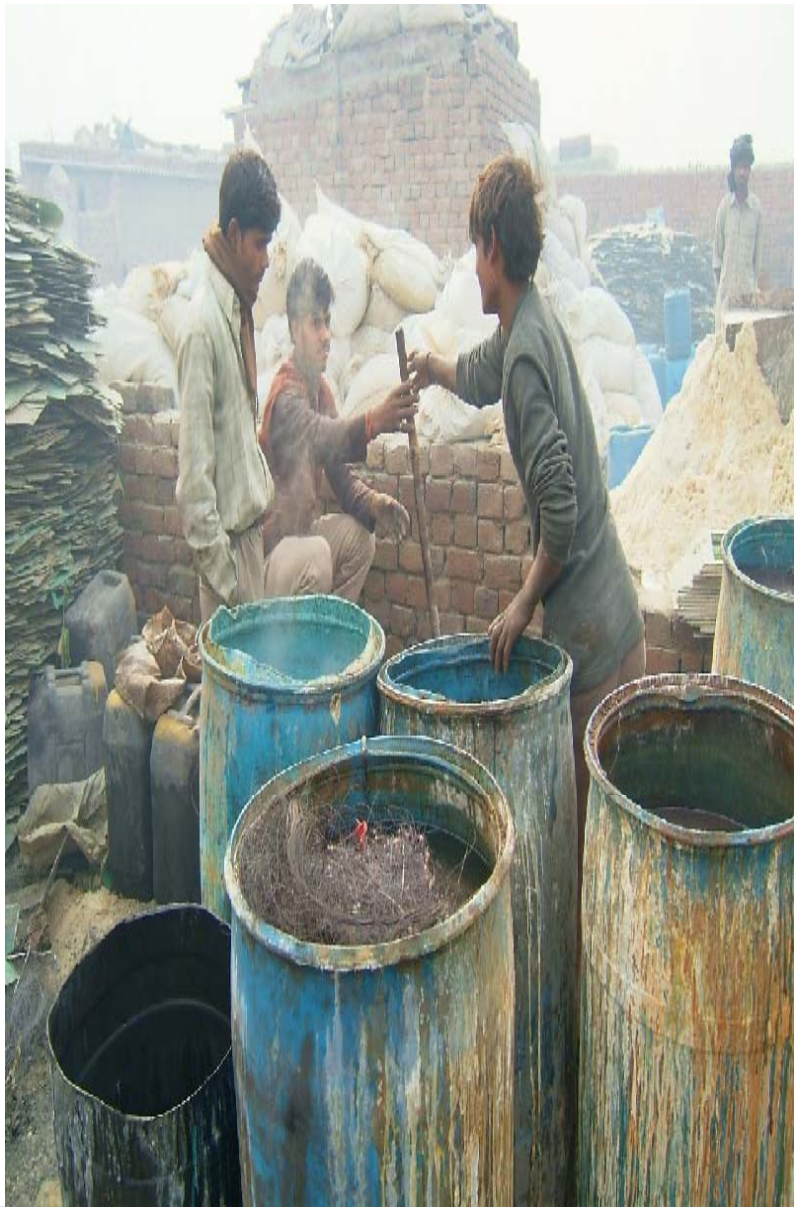
Recycling scenario in India

- E-waste recycling is presently concentrated in the informal (unorganized) sector
  - No organized collection system prevails
  - Operations are mostly illegal
  - Processes are highly polluting
  - Recycling operations engage in:
    - dismantling
    - sale of dismantled parts
    - valuable resource recovery
    - export of processed waste for precious metal recovery

…expected to rapidly change with formal recyclers setting operations

Concerns: Informal Recycling

- High-risk backyard operation
- Non- efficient and Non-environmentally sound technologies
- Occupational and environmental hazards
- Loss of resources due to inefficient processes
- Impacts vulnerable social groups- Women, children and mmigrant labourers



Legislations/Framework governing e-waste

- Various legislations cover different aspects of e-waste
  - The hazardous waste (management and handling) rules, 1998 as amended in 2008 for Toxic content – registration mandatory for recyclers
  - Municipal Solid Waste Management & Handling Rules for non-Toxic content
  - Basel convention for regulating transboundary movement
  - Foreign Trade policy restricts import of second-hand computers and does not permit import of e-waste
  - 'Guidelines' by Central Pollution Control Board (2008)

…however there is no dedicated legislation for environmentally sound Management of e-waste

e-Waste guidelines: Salient features

- The guidelines notified in April 2008 - basic guidance document identifying and recognizing fundamental principles:
  - Producer Responsibility
  - RoHS (Restriction on Hazardous Substances)
  - Best practices
  - Insight into technologies for various levels of recycling
- The guidelines explicitly mention the need for a separate legislation for implementing 'Producer Responsibility'

…however these are only voluntary and not mandatory

Need for a separate/dedicated legislation

- E-waste is 'distinct' as it is an end-of-consumption waste while hazardous waste results from a distinct industrial process
- Environment Protection Act provides for separate regulations for waste with 'distinct' characteristics - Biomedical Wastes (M&H) Rules- 1998 , lead acid batteries, the Batteries (M&H) Rules- 2001 etc.
- The e-waste value chain is rather complex as it involves multiple players - producers, distributors, retailers, end consumers, collection system, recyclers while hazardous waste chain involves only the 'occupier/ generator' and the 'operator'
- Recovery of non-ferrous metals and reprocessing of used oil are the only two major activities in hazardous waste recycling while e-waste recycling involves refurbishment for reuse, dismantling and precious metal recovery which is a complex process

Proposed e-Waste Rules

Title: E-waste (Management & Handling) Rules to be published under the Environment Protection Act

- OBJECTIVE :To put in place an effective mechanism to regulate the generation, collection, storage, transportation, import, export, environmentally sound recycling, treatment and disposal of e-waste. This includes refurbishment, collection system and producer responsibility thereby reducing the wastes destined for final disposal.

- ESSENCE: the producer of electrical and electronic equipments is responsible for the entire life cycle of its own branded product and in particular the environmentally sound end-of-life management and facilitating collection and take back.

Salient points of proposed e-waste Rules

- Responsibility of each element in the e-waste Value Chain:
  - Producers – Extended/Individual Producer Responsibility
  - Dealers
  - Collection agencies/ collection Centres
  - Dismantler
  - Recycler
  - Consumer and bulk consumers
- Procedure for Authorization of producers, collection agencies, dismantlers, recyclers and enforcement agencies
- Procedure for registration/renewal of registration of recyclers
- Regulations for import of e-waste
- Liability of producers, collection agencies, transporter, dismantlers and recyclers
- Information & Tracking
- Elimination of hazardous substances used in e-equipments
- Setting up of Designated Authority to ensure transparency, audit and inspect facilities, examine authorization/ registration etc.

We look forward to your support in enabling a frame-work for ESM of e-waste in India & an **effective implementation of the same!**

Thank you!