

eWaste recycling



"Electronic waste" may be defined as discarded computers, office electronic equipment, entertainment device electronics, mobile phones, television sets, and refrigerators. This includes used electronics which are destined for reuse, resale, salvage, recycling, or disposal. Others are re-usables (working and repairable electronics) and secondary scrap (copper, steel, plastic, etc.).



why worry about e-waste?

An estimated 50 million tons of E-waste are produced each year.

The USA discards 30 million computers each year & 100 million phones are disposed of in Europe each year.

The Environmental Protection Agency estimates that only 15-20% of E-Waste is recycled, the rest of these electronics go directly into landfills and incinerators.



Hazardous substances in EEE

Substance	Occurrence in EEE	Possible adverse effects
PBDEs, PBBs	Flame retardants in plastics	Hormonal effects under thermal treatment possible formation of dioxins and furanes.
Polychlorinated biphenyls (PCB)	Condensers, transformers	Cancer, effects on the immune system, reproductive system, nervous system, endocrine system and other health effects
Chlorofluorocarbon (CFC)	Cooling units, insulation foam	deleterious effect on the ozone layer -> increased incidence of skin cancer / genetic damage
Ameridium (Am)	Smoke detectors	radioactive element
Antimony	Flame retardants in plastics	carcinogenic potential
Arsenic	gallium arsenide night emitting diodes	skin diseases, decrease nerve conduction velocity, lung cancer
Barium	Getters in CRT	brain swelling, muscle weakness, damage to the heart, liver and spleen
Cadmium	NiCd-batteries, fluorescent layer (CRT screens), printer inks and toners	symptoms of poisoning (weakness, fever, headache, chills, sweating and muscular pain), lung cancer and kidney damage
Chromium VI	Data tapes, floppy-disks	irritating to eyes, skin and mucous membranes, DNA damage
Lead	CRT screens, batteries, printed wiring boards	vomiting, diarrhea, convulsions, coma or even death, appetite loss, abdominal pain, constipation, fatigue, sleeplessness, irritability and headache
Mercury	Fluorescent lamps, some alkaline batteries, switches	brain and liver damage

What is reduce, reuse, recycle (R3)?

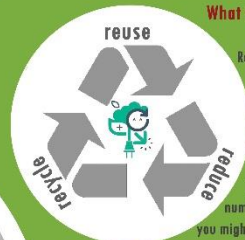
Reduce, reuse and recycle (R3) are the three essential components of environmentally-responsible consumer behavior.

R3 is sometimes called the waste hierarchy. Here's how that hierarchy might apply to computers:

The concept behind the first R, **reduce**, is that you should limit the number of purchases that you make in the first place. So, for example, you might limit your household to a single computer.

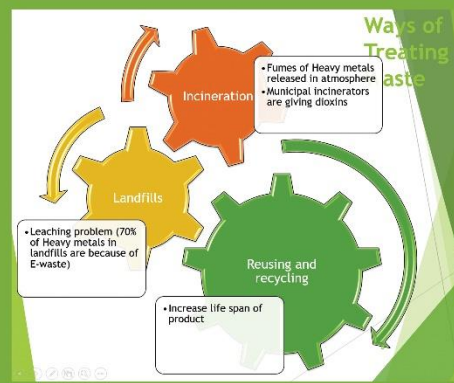
The concept behind the second R, **reuse**, is that you should reuse items as much as possible before replacing them. For example, it generally makes more environmental sense to update your computer rather than get rid of it and buy a new one. However, if you do replace your computer, you should ensure that it, or its components, are reused. Many charitable organizations welcome donations of second-hand computers.

The concept behind the third R, **recycle**, is that you should ensure that items or their components are put to some new purpose as much as possible. If your computer is not fit for reuse as is, you can donate it to one of several organizations, such as SIRUT (Students Recycling Used Technology), which will refurbish it or recycle its components.



reuse & recycle

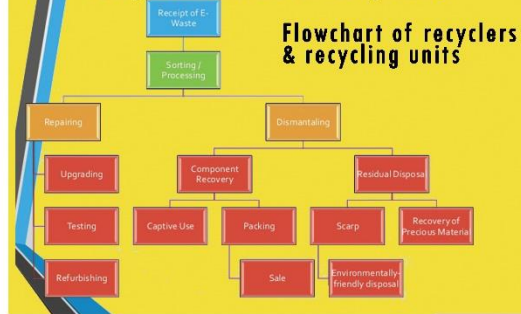
remanufacture,



BE RESPONSIBLE TODAY FOR A BETTER FUTURE TOMORROW

Disposal of obsolete appliances in an environmentally friendly way to protect the Earth

Steps involved in recycling



Storage of hazardous waste



Modern Recycling Plants



Segregation and storage



Functional testing



Dismantling

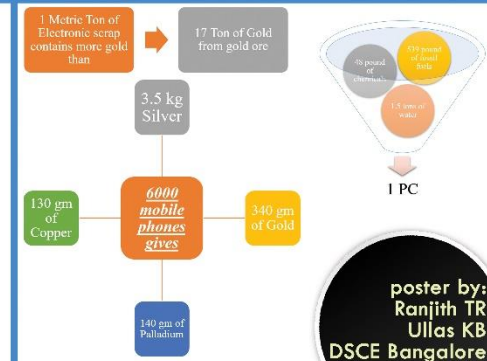


Scrap recovery



Probable Solutions

- Need for stringent health standards and environmental protection laws in India,
- Extended producer responsibility,
- Import of waste under license,
- Producer-public-government cooperation,
- Awareness program, following safer and efficient methods
- Choosing safer technology and cleaner substitute,
- Monitoring of compliance rules,
- Reduction of waste at source,
- Investment opportunity in waste management sector and
- Recognition to the unorganised sector in India.



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"I am like a child playing on the shore with pebbles and shells while whole ocean lies before me" -Newton