social awareness on e-waste

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Introduction:

**Electronic waste** or **e-waste** describes discarded electrical or [electronic devices](https://en.wikipedia.org/wiki/Electronic_devices). Used electronics which are destined for reuse, resale, salvage, recycling or disposal are also considered e-waste. Informal processing of e-waste in developing countries can lead to adverse human health effects and environmental pollution Electronic waste" may be defined as discarded computers, office electronic equipment, entertainment device [electronics](https://en.wikipedia.org/wiki/Electronics), [mobile phones](https://en.wikipedia.org/wiki/Mobile_phones), [television sets](https://en.wikipedia.org/wiki/Television_set), and[refrigerators](https://en.wikipedia.org/wiki/Refrigerator). 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.) to be "commodities", and reserve the term "waste" for residue or material which is dumped by the buyer rather than recycled, including residue from reuse and recycling operations. Because loads of surplus electronics are frequently commingled (good, recyclRapid changes in technology, changes in media (tapes, software, MP3), falling prices, and [planned obsolescence](https://en.wikipedia.org/wiki/Planned_obsolescence) have resulted in a fast-growing surplus of electronic waste around the globe.able, and non-Display units (CRT, LCD, LED monitors), processors (CPU, GPU, or APU chips), memory (DRAM or SRAM), and audio components have different useful lives. Processors are most frequently out-dated (by software no longer being optimized) and are more likely to become "e-waste", while display units are most often replaced while working without repair attempts, due to changes in wealthy nation appetites for new display technology. This problem could potentially be solved with [Modular](https://en.wikipedia.org/w/index.php?title=Modular_Smartphones&action=edit&redlink=1)  Smartphones or [Phonebloks](https://en.wikipedia.org/wiki/Phonebloks). These types of phones are more durable and have the technology to change certain parts of the phone making them more environmentally friendly. Being able to simply replace the part of the phone that is broken will reduce e-waste.[[7]](https://en.wikipedia.org/wiki/Electronic_waste#cite_note-7) An estimated 50 million tons of E-waste are produced each yearrecyclable) Society today revolves around technology and by the constant need for the newest and most high tech products we are contributing to mass amount of e-waste.] Since the invention of the iPhone, cell phones have become the top source of e-waste products because they are not made to last more than two years. Electrical waste contains hazardous but also valuable and scarce materials. Up to 60 elements can be found in complex electronics.[[]](https://en.wikipedia.org/wiki/Electronic_waste#cite_note-13) As **Electronic waste** or **e-waste** describes discarded electrical or [electronic devices](https://en.wikipedia.org/wiki/Electronic_devices). Used electronics which are destined for reuse, resale, salvage, recycling or disposal are also considered e-waste. Informal processing of e-waste in developing countries can lead to adverse human health effects and envirThe processes of dismantling and disposing of electronic waste in developing countries lead to a number of environmental impacts as illustrated in the graphic. Liquid and atmospheric releases end up in bodies of water, groundwater, soil, and air and therefore in land and sea animals – both domesticated and wild, in crops eaten by both animals and human, and in drinking water mental pollution of 2013, One study of environmental effects in Guiyu, China found the following:[[49]](https://en.wikipedia.org/wiki/Electronic_waste#cite_note-49) Audiovisual components, televisions, [VCRs](https://en.wikipedia.org/wiki/Videocassette_recorder), [stereo equipment](https://en.wikipedia.org/wiki/Sound_recording_and_reproduction), mobile phones, other handheld devices, and [computer components](https://en.wikipedia.org/wiki/Computer_hardware) contain valuable elements and substances suitable for reclamation, including lead, copper, and gold.

One of the major challenges is recycling the printed circuit boards from the electronic wastes. The circuit boards contain such precious metals as gold, silver, platinum, etc. and such base metals as copper, iron, aluminum, etc. One way e-waste is processed is by melting circuit boards, burning cable sheathing to recover copper wire and open- pit acid leaching for separating metals of value.[[53]](https://en.wikipedia.org/wiki/Electronic_waste#cite_note-53) Conventional method employed is mechanical shredding and separation but the recycling efficiency is low. Alternative methods such as [cryogenic decomposition](https://en.wikipedia.org/w/index.php?title=Cryogenic_decomposition&action=edit&redlink=1) have been studied for printed circuit board recycling,[[54]](https://en.wikipedia.org/wiki/Electronic_waste" \l "cite_note-54) and some other methods are still under investigation.

* As properly disposing of or reusing electronics can help prevent health problems, reduce greenhouse-gas emissions and create jobs,[[55]](https://en.wikipedia.org/wiki/Electronic_waste#cite_note-55) there have been calls to reform "the methodology for e-waste disposal and re-use in developing countries"[[56]](https://en.wikipedia.org/wiki/Electronic_waste#cite_note-Oladipo-56) with reuse and refurbishing offering a more environmentally friendly and socially conscious alternative to [downcycling](https://en.wikipedia.org/wiki/Downcycling) processes Airborne [dioxins](https://en.wikipedia.org/wiki/Dioxins) – one type found at 100 times levels previously measured
* Levels of [carcinogens](https://en.wikipedia.org/wiki/Carcinogen) in [duck ponds](https://en.wikipedia.org/wiki/Duck_pond) and [rice paddies](https://en.wikipedia.org/wiki/Rice_paddy) exceeded international standards for agricultural areas and cadmium, copper, nickel, and lead levels in rice paddies were above international standards
* [Heavy metals](https://en.wikipedia.org/wiki/Heavy_metal_(chemistry)) found in [road dust](https://en.wikipedia.org/wiki/Road_dust) – lead over 300 times that of a control village's road dust and copper over 100 times

The U.S. Environmental Protection Agency encourages electronic recyclers to become certified by demonstrating to an accredited, independent third party auditor that they meet specific standards to safely recycle and manage electronics. This works to ensure the highest environmental standards are being maintained. Two certifications for electronic recyclers currently exist and are endorsed by the EPA. Customers are encouraged to choose certified electronics recyclers. Responsible electronics recycling reduces environmental and human health impacts, increases the use of reusable and refurbished equipment and reduces energy use while conserving limited resources. The two EPA-endorsed certification programs are: Responsible Recyclers Practices (R2) and [E-Stewards](https://en.wikipedia.org/wiki/E-Stewards)

Recycling raw materials from end-of-life electronics is the most effective solution to the growing e-waste problem. Most electronic devices contain a variety of materials, including metals that can be recovered for future uses. By dismantling and providing reuse possibilities, intact natural resources are conserved and air and water pollution caused by hazardous disposal is avoided. Additionally, recycling reduces the amount of greenhouse gas emissions caused by the manufacturing of new products.[[76]](https://en.wikipedia.org/wiki/Electronic_waste#cite_note-76) Another benefit of recycling e-waste is that many of the materials can be recycled and re-used again. Materials that can be recycled include "ferrous (iron-based) and non-ferrous metals, glass, and various types of plastic." “Non-ferrous metals, mainly aluminum and copper can all be re-smelted and re-manufactured. Ferrous metals such as steel and iron can be also be re-used."[[77]](https://en.wikipedia.org/wiki/Electronic_waste#cite_note-77) Due to the recent surge in popularity in 3D printing, certain 3D printers have been designed (FDM variety) to produce waste that can be easily recycled which decreases the amount of harmful pollutants in the atmosphere.[[78]](https://en.wikipedia.org/wiki/Electronic_waste#cite_note-78) The excess plastic from these printers that comes out as a byproduct can also be reused to create new 3D printed creations