

# E- waste

## Before you Begin

Electronic Waste, or E-waste, refers to all items of electrical and electronic equipment (EEE) and its parts that have been discarded by its owner as waste without the intent of re-use (Step Initiative 2014).

The Global E-waste Monitor – 2017 describes six different categories of E-waste.

1. Temperature exchange equipment, (commonly referred to as cooling and freezing equipment). Typical equipment includes refrigerators, freezers, air conditioners, heat pumps.
2. Screens and monitors. Typical equipment includes televisions, monitors, laptops, notebooks, and tablets.
3. Lamps. Typical equipment includes fluorescent lamps, high intensity discharge lamps, and LED lamps.
4. Large equipment. Typical equipment includes washing machines, clothes dryers, dish-washing machines, electric stoves, large printing machines, copying equipment and photovoltaic panels.
5. Small equipment. Typical equipment includes vacuum cleaners, microwaves, ventilation equipment, toasters, electric kettles, electric shavers, scales, calculators, radio sets, video cameras, electrical and electronic toys, small electrical and electronic tools, small medical devices, small monitoring and control instruments.
6. Small IT and telecommunication equipment. Typical equipment includes mobile phones, Global Positioning Systems (GPS), pocket calculators, routers, personal computers, printers, telephones.

### How is E-waste generated?

Electronics waste, is the waste generated from surplus, broken and obsolete electronic devices. Also the different categories of products mentioned above produce different types of waste. The production of waste depends on the life of the product, on technological advancements and also on social and economic developments.

### Why is E-waste of concern?

E-waste contains hazardous substances that, if treated inappropriately at end-of-life, can damage human health and the environment. It also contains complex valuable materials, such as precious metals which need to be treated properly to effectively recover them with minimal environmental impact and in the process reduce the demand for such material through mining.

## **The mounting problem**

There are several reasons for the mounting E-waste problem. These include rapid technological advancements, social and economic development, and more spending power to buy a variety of electronic products.

## **The statistics!**

The Global E-waste Monitor – 2017, reported a staggering amount of e-waste generated in 2016. According to the report 44.7 million metric tonnes of E-waste was generated in 2016. This is an equivalent of almost 4500 Eiffel Towers! The statistics are even more overwhelming as globally, only 8.9 Mt or 20 percent of the total E-waste generated is documented to be collected and recycled.

## **E-waste recycling**

E-waste or electronics recycling is the process of recovering material from old devices to use in new products. Electronics are full of valuable materials including copper, tin, iron, aluminum, fossil fuels, titanium, gold, and silver. Many of the materials used in making these electronic devices can be recovered, reused and recycled, including plastics, metals, and glass.

The problem is however severe as the production of E-waste rates are not matching their recycling rates. The Global E-waste Monitor – 2017 mentions that only 41 countries have Official E-waste Statistics. The fate of a large majority of the E-waste (34.1 Mt) is simply unknown. The report goes on to state that “In countries where there is no national e-waste legislation in place, E-waste is likely treated as other or general waste. This is either land-filled or recycled, along with other metal or plastic wastes. There is the high risk that the pollutants are not taken care of properly, or they are taken care of by an informal sector and recycled without properly protecting the workers, while emitting the toxins contained in E-waste.”