



## Perspective: Tackling E-waste

**For Prelims:** E-waste, Extended Producer Responsibility (EPR).

**For Mains:** E-waste Management in India- Related Challenges, Provisions regarding E-waste in India, Preliminary Steps in the Disposal and Management, Steps that need to be taken.

### Why in News?

India is now **planning a shift to two standard chargers across mobile phone brands and portable-electronic devices** which in turn will help in tackling the issue of [e-waste](#).

### What are the Key Points?

- According to an ASSOCHAM-EY report on electronic waste management, India is estimated to have generated **five million tonnes of e-waste in 2021**, ranking only behind after China and the USA.
- This shift towards common chargers will not only simplify things for consumers but also **cut down on massive amounts of e-waste generated in the country**. Many advanced economies are already moving toward standard charging devices.
- The [European Union \(EU\)](#) has ordered the USB-C port as standard for all devices by mid-2024, including Apple's iPhone, which at present uses its own standard.
- Under the new rule, European Block consumers would **no longer require different charging devices and cables** every time they purchase a new mobile phone.
  - Also, European law would reportedly end the need for providing chargers with new phones and similar devices since **users would already have the necessary accessories**.

### What is E-Waste?

- E-Waste is **short for Electronic-Waste** and the term is used to describe old, end-of-life or discarded electronic appliances. It includes their components, consumables, parts and spares.
- Laws to manage e-waste have been in **place in India since 2011, mandating that only authorised dismantlers and recyclers collect e-waste**. E-waste (Management) Rules, 2016 was enacted in 2017.
- **India's first e-waste clinic** for segregating, processing and disposal of waste from household and commercial units has been **set-up in Bhopal, Madhya Pradesh**.
- Originally, the [Basel Convention \(1992\)](#) did not mention e-waste but later it addressed the issues of e-waste in 2006 (COP8).
  - The **Nairobi Declaration was adopted at COP9** of the Basel Convention on the Control of the Trans-boundary Movement of Hazardous Waste. It aimed at creating innovative solutions for the environmentally sound management of electronic wastes.

### What are the Challenges Related to the Management of E-Waste in India?

- **Less Involvement of People:**
  - A key factor in used electronic devices **not being given for recycling** was because consumers themselves did not do so.
    - However, in recent years, countries around the world have been attempting to pass effective 'right to repair' laws.
- **Involvement of Child Labor:**
  - In India, about **4.5 lakh child laborers in the age group of 10-14 are observed to be engaged in various E-waste activities** and that too without adequate protection and safeguards in various yards and recycling workshops.
- **Ineffective Legislation:**
  - There is absence of any public information on most State Pollution Control Boards (SPCBs)/PCC websites.
- **Health Hazards:**
  - E-waste **contains over 1,000 toxic materials**, which contaminate soil and groundwater.
- **Lack of Incentive Schemes:**
  - No clear guidelines are there for the unorganized sector to handle E-waste.
  - Also, no incentives are mentioned to lure people engaged to adopt a formal path for handling E-waste.
- **E-waste Imports:**
  - Cross-border flow of waste equipment into India- 80% of E-waste in developed countries meant for recycling is sent to developing countries such as India, China, Ghana and Nigeria.
- **The Reluctance of Authorities' Involved:**
  - Lack of coordination between various authorities responsible for E-waste management and disposal including the non-involvement of municipalities.
- **Security Implications:**
  - End of life computers often contain sensitive personal information and bank account details which, if not deleted leave opportunity for fraud.

## What are the Provisions regarding E-waste in India?

- India has a formal set of rules for electronic waste management, first announced **these rules in 2016 and amended it in 2018**.
  - Recently, the Ministry of Environment, Forest and Climate Change has released the [draft notification for Electronic Waste Management](#)
- The Ministry of Environment, Forest and Climate Change notified the [E-Waste Management Rules, 2016](#) in supersession of the **E-waste (Management & Handling) Rules, 2011**.
- Over 21 products (Schedule-I) were included under the purview of the rule. It included **Compact Fluorescent Lamp (CFL) and other mercury containing lamps**, as well as other such equipment.
- For the first time, the rules brought the **producers under Extended Producer Responsibility (EPR), along with targets**. Producers have been made responsible for the collection of E-waste and for its exchange.
- Various producers can have a separate **Producer Responsibility Organisation (PRO)** and ensure collection of E-waste, as well as its disposal in an environmentally sound manner.
- **Deposit Refund Scheme** has been introduced as an additional economic instrument wherein the producer charges an additional amount as a deposit at the time of sale of the electrical and electronic equipment and returns it to the consumer along with interest when the end-of-life electrical and electronic equipment is returned.
- The role of **State Governments has been also introduced** to ensure safety, health and skill development of the workers involved in dismantling and recycling operations.
- A provision of **penalty for violation of rules** has also been introduced.
- **Urban Local Bodies** (Municipal Committee/Council/Corporation) have been assigned the duty to collect and channelize the **orphan products to authorized dismantlers or recyclers**.
- Allocation of **proper space to existing and upcoming industrial units for e-waste dismantling and recycling**.

## What are E-waste Recycling Practices in India?

- **Informal Sector:**

- 95% of the e-waste in India is being recycled in the non-formal sector and 5% of the e-waste volume is handled in the formal unit.
- Non-formal units generally follow steps such as a collection of the e-waste from the rag pickers, disassembly of the products for their useable parts, components, modules, which are having resell value.
- The rest of the material is **chemically treated to recover precious metals**. Due to inadequate means, it may cause **leaching of hazardous substances** to the air, soil, and water.
- This recycling method has low efficiency and **recovery is carried out only for valuable metals** like gold, silver, aluminum, copper, etc.
  - Other materials such as tantalum, cadmium, zinc, palladium etc. could not be recovered.
- **Formal Sector:**
  - The recycling/ recovery of valuable substances by units in the formal sector is **carried out in a protected environment** and with due care to minimise any damage to the environment or society.
  - The use of advanced processes and technologies leads to the efficient recovery of metals.
    - Recovery technology by units in formal sector will be economically viable as the high cost of capital equipments and needed techniques could be shared by the volume of products.
  - Efficiency of recovery in formal recycling is high and metals at the trace level can also be recovered. Some technology works with a zero-landfill approach.
  - Most of the e-waste in India is channelised to non-formal sector, whereas the formal sector is **facing the problem of not having sufficient input materials**.

## What can be the Preliminary Steps in the Disposal and Management of E-waste?

- **Purchase Fewer Items**
  - The most common source of e-waste is the purchase of items that people do not require. Avoid buying new electronic devices that the maker can't reuse or discard. Opting for recyclable or long-lasting electronic products is a sustainable step toward e-waste management.
- **Donate or Give Away of E-waste**
  - If the consumer doesn't need something he/she can donate it so that it can be appreciated by someone else. Donations are excellent tax deductions since the amount is generally close to the worth of the asset if sold.
- **Selling Unused Products**
  - Selling electronics as soon as there is no need to keep them; newer models quickly depreciate in value. There is a plethora of companies that will gladly buy the old electronic equipment. They offer to provide 'money in exchange for product' services.
- **Awareness about the Recycling Possibilities**
  - There's a need to be aware of rules and regulations regarding the e-waste management on which the government is working. As e-waste is not hazardous if it is stocked in safe storage or recycled by scientific methods or transported from one place to the other in parts or in totality in the formal sector.
    - The e-waste can, however, be considered hazardous if recycled by primitive methods.

## What can be the Way Forward?

- **Policies and Better Implementation:** There are various startups and companies in India that have now started to collect and recycle electronic waste. We need better implementation methodologies and inclusion policies that provide accommodation and validation for the informal sector to step up and help us meet our recycling targets in an environmentally sound manner.
- **Need of Inclusion:** Also, successfully raising collection rates required every actor to be involved, including consumers.
- **Encouraging Informal Sector:** It is needed to come up with a strategy to engage with informal

sector workers because doing so will not only go a long way in better e-waste management practices but also aid in environmental protection, improve the health and working conditions of labourers and provide better work opportunities to over a million people.

◦ This will make management environmentally sustainable and easy to monitor.

- **Increase in Employment:** The need of the hour is to generate employment, which can be done through identifying and promoting cooperatives and expanding the scope of the E-Waste (Management) Rules, 2016 to these cooperatives or the informal sector workers.

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

### Prelims

**Q. In India, 'extend producer responsibility' was introduced as an important feature in which of the following? (2019)**

- (a) The Bio-medical Waste (Management and Handling) Rules, 1998
- (b) The Recycled Plastic (Manufacturing and Usage) Rules, 1999
- (c) The e-Waste (Management and Handling) Rules, 2011
- (d) The Food Safety and Standard Regulations, 2011

**Ans: (c)**

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