

## Circular Economy in Electronics Sector

### Why in news?

Recently, The Indian Cellular and Electronics Association (ICEA) released a report on 'Pathways to Circular Economy in Indian Electronics Sector' to build a system where discarded electronics can have a new life.

### Circular economy

- According to the World Economic Forum, [a circular economy](#) is “an industrial system that is restorative or regenerative by intention and design.”
- It calls for a production model aiming to retain the most value to create a system that promotes sustainability, longevity, reuse, and recycling.
- **Significance**
  - To accommodate the growing *demand for electronics*
  - To bring back e-wastes into economy for *optimum utilization of resources*
  - To *address environmental issues* related to rising environmental pollution and impact of climate change
  - To *achieve Sustainable Development Goal 12* related to Sustainable production and consumption
  - To *create employment* as recycling has the potential to create 6 times more jobs
  - To *save money* as recycling generate around INR 14 lakh crore of additional cost savings by 2030

### What are e-wastes?

*According to Global E-waste Monitor Report 2020, India is the third largest e-waste generator in the world.*

- **E-waste** (electronic waste) is used to describe old, end-of-life or discarded electric and electronic appliances.
- **India's e-waste Management**
  - **Largely informal in India** - Roughly 90% of collection and 70% of the recycling are managed by a very competitive informal sector.
  - In India, *Mumbai ranks first* in generating e-waste followed by Delhi, Bangalore, Chennai.
  - **Industrial hubs** - Like one in Moradabad, where printed circuit boards (PCBs) gold and silver melted out of them and sold.

- **E-Waste (Management) Rules, 2022** - digitise the process and provide more visibility to the movement of e-waste in the economy.

### How can e-wastes be recycled?

- **Encourage manufacturers to use old components** - Like China which targets 35% of secondary raw materials in new products by 2030.
- **Promote public-private partnerships (PPP)** - PPPs can distribute the costs of setting of reverse supply chain.

*Reverse Supply chain envisages collecting devices, wiping them clean of data and passing them along for further processing and recycling.*

- **Launch an auditable database** - Maintain transparent record of materials collected for accountability.
- **Create geographical clusters**- Concentrate devices in specific areas for dismantling and recycling.
- **Incentivising high yield recycling centres** - Equipping centres can be set to extract the full potential value of the products they handle.
- **Right to repair**- Encourage repair and longevity to reduce the environmental burden of e-waste.

### What are the challenges associated in recycling?

- **Lack of Infrastructure** - There is a lack of infrastructure for collection, treating and recycling e-wastes.
- **High costs** - Setting up of recycling centres requires high initial capital costs.
- **Idle e-devices** - Around 200 million devices are estimated to be lying at consumers' homes without getting recycled.
- **Lack of financial incentives** - There is the lack of public awareness of e-waste hazards in India, and recycling is, therefore, very low.
- **Less Information**- There is less understanding of a nature and amount of e-waste that gets imported into the country.
- **Unsustainable Informal Sector Practices**- The sector's waste management practices pose serious environmental and health hazards to the workers themselves as well as the larger public.

### Steps taken for e-waste management

- **Resource Efficiency Circular Economy Industry Coalition (RECEIC)** in line with G20 Environment and Climate Sustainability Working Group (ECSWG) held its meeting in 2023 in Chennai.
- **India's first e-waste clinic in Bhopal** was setup by Bhopal Municipal Corporation and Central Pollution Control Board (CPCB).
- **E-Waste (Management) Rules, 2016** extend the responsibility to producers to manage a system of e-waste collection, storage, transportation, and

environmentally sound dismantling and recycling through Extended Producer Responsibility (EPR).

- **Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS)** provides a financial incentive of 25% on capital expenditure for setting up modern recycling facilities for the extraction of precious metals from e-waste.
- **Directorate General of Foreign Trade (DGFT)** was constituted under the Foreign Trade (Development & regulation) Act 1992 to grant/ refuse licence for hazardous wastes prohibited for imports under the Environment (protection) Act, 1986.
- **Port Authorities and Customs Authorities** under the customs Act, 1962 verify the documents for any illegal traffic of hazardous wastes.
- **Nairobi Declaration of Basel Convention** relates to control of Trans-boundary movement of hazardous wastes including e-wastes.
- *E-waste Day is held on October 14* every year since 2018.

### What lies ahead?

- **Enforcing legislation** - Stringent provisions under extended producer responsibility is needed.
- **Facilitate PRO** - Producer Responsibility Organisations (PRO) can be utilized to transfer responsibilities and liabilities.
- **Formal e-waste facility** - Boosting the formal e-waste facility is needed to protect the welfare of labours of informal sectors.
- **Inventories**- Inventories for e-wastes need to be set at both regional and at national level.
- **Clustering of materials** - For efficient recycling process, better clustering of materials is essential.
- **Viable business model** - Viable business model can be developed for better returns and sustainability of the business.

### References

1. [The Hindu| E-waste management](#)
2. [The Hindu Business Line| Circular Economy](#)