

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, <u>a circular economy</u> 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*
 - \circ To $\underline{address\ environmental\ issues}$ related to rising environmental pollution and impact of climate change
 - To <u>achieve Sustainable Development Goal 12</u> related to Sustainable production and consumption
 - \circ To $\underline{create\ employment}$ as recycling has the potential to create 6 times more jobs
 - \circ To <u>save money</u> 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.

- <u>E-waste</u> (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, <u>Mumbai ranks first</u> 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.

<u>Reverse Supply chain</u> 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

