



Invisible E-Waste

For Prelims: Invisible [E-Waste](#), [Waste Electrical and Electronic Equipment \(WEEE\)](#), United Nations Institute for Training and Research (UNITAR), [E-waste \(Management\) Rules, 2016](#), [Extended producer's responsibility \(EPR\)](#).

For Mains: Concerns Regarding Invisible E-Waste, Environmental pollution and degradation, Environmental impact assessment.

[Source: DTE](#)

Why in News?

Recently, the Brussels-based [Waste Electrical and Electronic Equipment \(WEEE\) Forum on the Occasion of International E-Waste Day \(14th October\)](#), commissioned the **United Nations Institute for Training and Research (UNITAR)** to calculate the annual quantities of **Invisible E-Waste items**.

- **Invisible e-waste** refers to electronic waste that often goes unnoticed due to its nature or appearance, causing consumers to overlook its recyclable potential.
- There are Numerous electronic items falling under this category, such as **cables, e-toys, e-cigarettes, e-bikes, power tools, smoke detectors**, USB sticks, wearable health devices, and smart home gadgets.

What is the WEEE Forum?

- It is the world's **largest multinational centre of competence** as regards operational know-how concerning the management of 'waste electrical and electronic equipment' (or 'WEEE', for short).
- It is a **not-for-profit association of 46 WEEE producer responsibility organisations** across the world and was founded in April 2002.
- Through exchange of best practice and access to its reputable knowledge base toolbox, the WEEE Forum **enables its members to improve their operations** and be known as promoters of the circular economy.

What are the Key Highlights of the Study?

- **Invisible E-Waste Volume:**
 - Consumers fail to recognize almost **one-sixth of global Electronic Waste**, totaling nearly 9 billion kilograms annually.
 - Around **35% of invisible e-waste (approximately 3.2 billion kilograms)** comes from the e-toy category, including race car sets, electric trains, drones, and biking computers.
 - An estimated **844 million vaping devices are discarded** annually, contributing significantly to the invisible e-waste mountain.

- **Value of Invisible E-Waste:**
 - The material value of invisible e-waste amounts to about **USD 9.5 billion** each year, showcasing its **economic importance primarily due to components** like iron, copper, and gold.
- **Global E-Waste Management and Recycling Challenges:**
 - Globally, only a **small fraction of e-waste is properly collected, treated, and recycled.**
 - In Europe, 55 % of e-waste generated is now officially collected and reported. Still, in other parts of the world the reported **average collection rate is just over 17%.**
 - The majority **ends up in landfills, burned, illegally traded,** improperly treated, or hoarded in households.
 - **Lack of public awareness** hampers efforts to develop circular economies for electronic equipment in various parts of the world, necessitating a global approach to e-waste management.
- **Environmental Concerns:**
 - **Improper disposal** of invisible e-waste poses a substantial environmental risk, as hazardous components in these items, **such as lead, mercury, and cadmium,** can contaminate soil and water if not appropriately managed.
- **Recommendations:**
 - Invisible e-waste represents an **untapped resource,** highlighting the potential for economic recovery and the urgent **need to raise awareness about recycling these valuable materials.**
 - The **value of raw materials** in the global e-waste generated amounted to an **estimated USD57 billion in 2019.** Of the total, a sixth or **USD9.5 billion** in material value each year is in the **invisible e-waste category.**
 - Raising awareness is **crucial to unlock the recycling potential** and meet the growing demand for materials in various strategic sectors like renewable energy, electric mobility, industry, communications, aerospace, and defense.

What are the Provisions regarding E-waste in India?

- **E-waste (Management) Rules, 2016** was enacted in 2017, with over 21 products (Schedule-I) included under the purview of the rule. It included Compact Fluorescent Lamp (CFL) and other mercury containing lamps, as well as other such equipment.
- In 2011, a significant notice pertaining to the E-waste (Management and Handling) Regulations of 2010, governed by the Environment (Protection) Act of 1986, was issued.
 - **Extended producer's responsibility (EPR)** was its main feature.
- Government of India notified **E-Waste (Management) Rules, 2022** with a major aim to digitize the e-waste management process and enhance visibility.
 - It also restricts the use of hazardous substances (such as lead, mercury, and cadmium) in manufacturing electrical and electronic equipment that have an adverse impact on human health and the environment.
- **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.

Conclusion

- Addressing the issue of "invisible e-waste" is imperative to achieve sustainable waste management and environmental preservation.
- Raising awareness about the recyclable potential of these often overlooked electronic items is crucial to minimize their environmental impact, promote **circular economy** and unlock their economic value through responsible recycling initiatives.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Q. What are the impediments in disposing of the huge quantities of discarded solid waste which are continuously being generated? How do we safely remove the toxic wastes that have been accumulating in our habitable environment? **(2018)**

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