



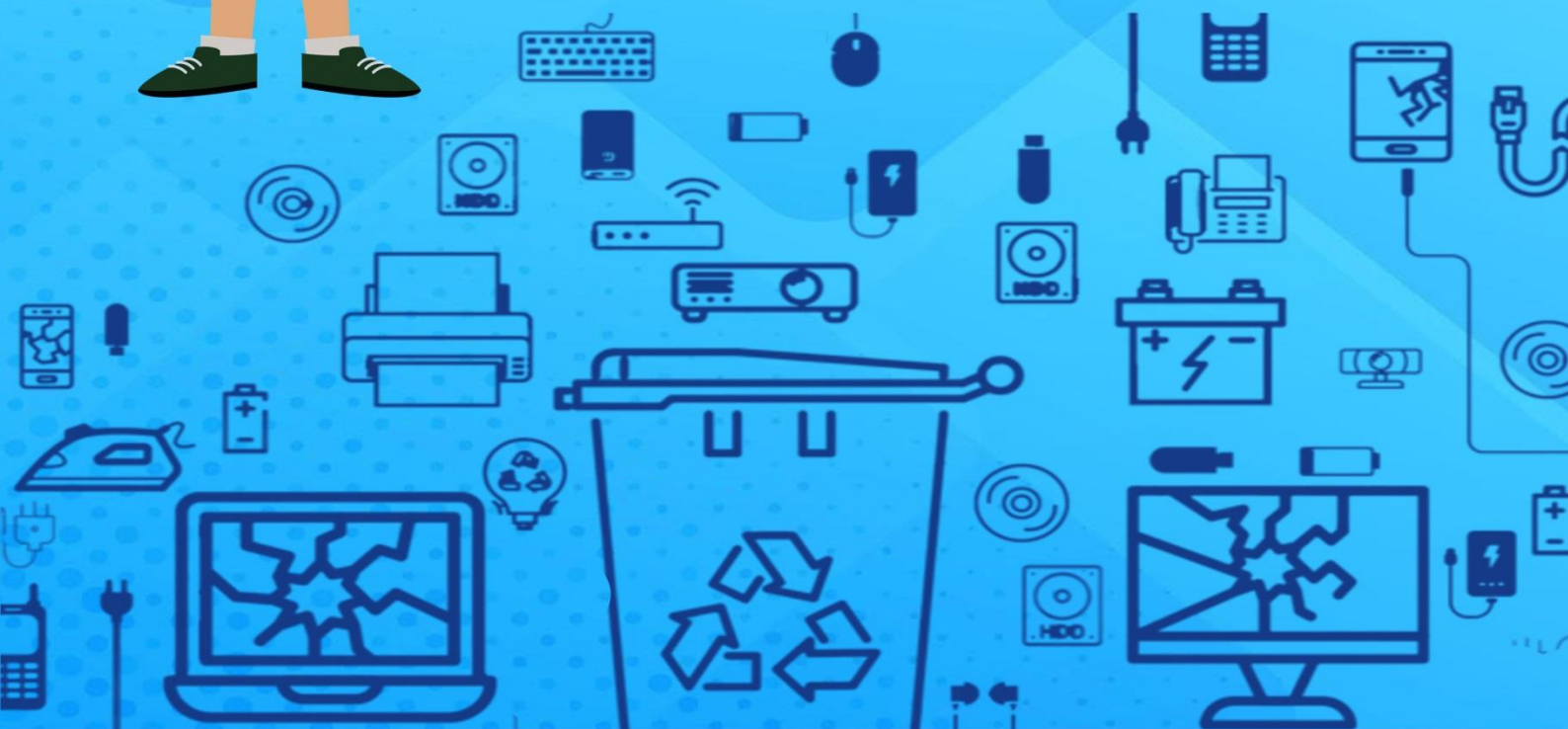
**INDIAN INSTITUTE OF TROPICAL METEOROLOGY (IITM), Pune**  
**Environmental Information, Awareness Capacity Building and Livelihood Programme**  
**(EIACP) PC-RP**

Ministry of Environment, Forest and Climate Change (MoEF&CC), Govt. of India

# IITM-EIACP Newsletter



## E-WASTE



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## EDITORIAL

In an era defined by technological marvels and rapid innovation, the ubiquitous electronic devices that enhance our daily lives have become indispensable. But this digital revolution comes at a hidden cost – the mounting problem of electronic waste, or e-waste. In this edition of our newsletter, we shed light on this ever-growing concern and explore our collective responsibility in addressing it. Electronic devices containing hazardous materials like lead, mercury, and cadmium. When improperly disposed of or recycled, these toxins can leach into soil and water, contaminating ecosystems and posing a risk to both humans and wildlife.

E-waste is not just a problem for the future; it's a problem we face today. It demands our collective action, responsibility, and innovation. By adopting responsible consumption habits, supporting recycling initiatives, and advocating for change, we can turn the tide on this growing e-waste crisis.

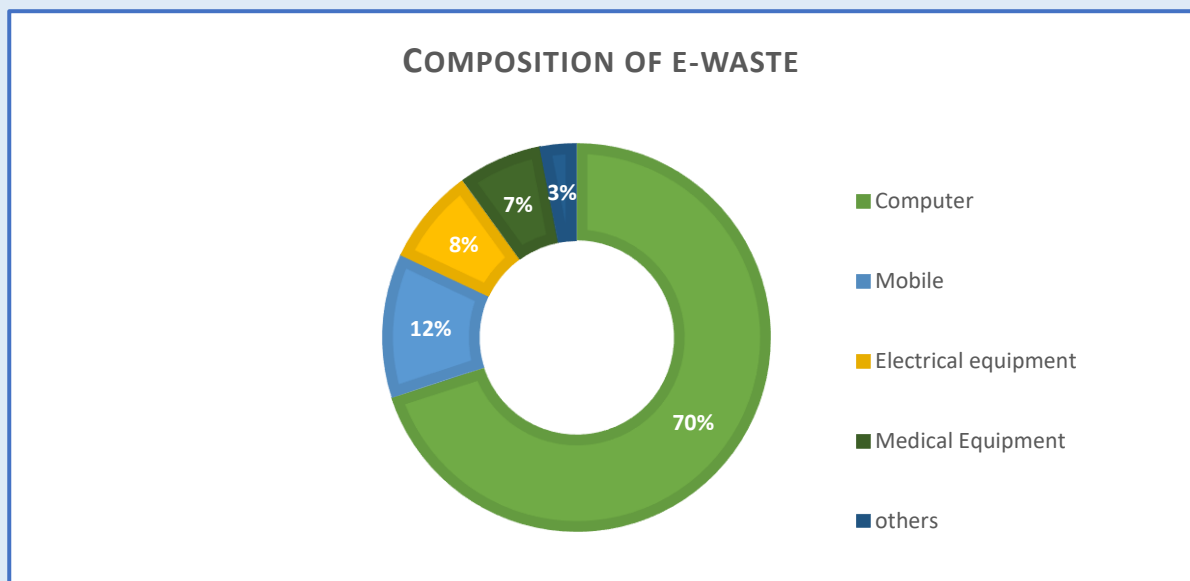
Let's remember that our planet's health and the well-being of future generations depend on the choices we make today.

Together, we can make a difference.

**- Dr. B.S. Murthy**

## E-waste scenario in India

E-waste i.e., electronic/electrical waste, is the waste generated by electronic and electric equipment consisting of consumer appliances such as televisions, refrigerators, air conditioners, induction mobile phones, and computers. In building an effortless life, consuming these products has enormously increased demand for such products. However, it generated a massive amount of waste after its lifecycle. Annually, 57.4 million tons of e-waste is generated globally and is projected to reach 74 million tons by 2030. According to CPCB, 1 million tons of E-waste is generated in India alone, but only 1.5% is recycled here, whereas in developed countries like the US, it is 15% of their e-waste.

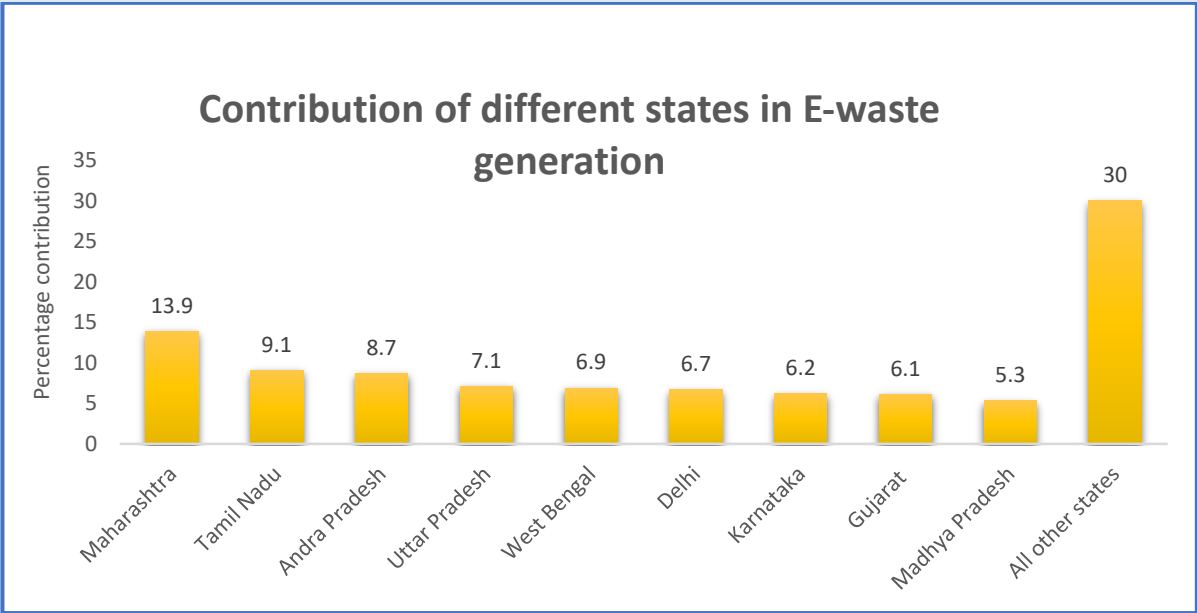


*Fig 1 Source: KPMG and ASSOCHAM*

A switch to renewable energy is happening with the advent of discussion on climate change around the globe. In India, electric vehicle sales are less than 2% currently, though it may rise to 30% by 2030. This change can bring a situation of heap up of the used batteries of these vehicles. Though the e-vehicle could curb air pollution, this shifts to finding a solution for battery waste generation.

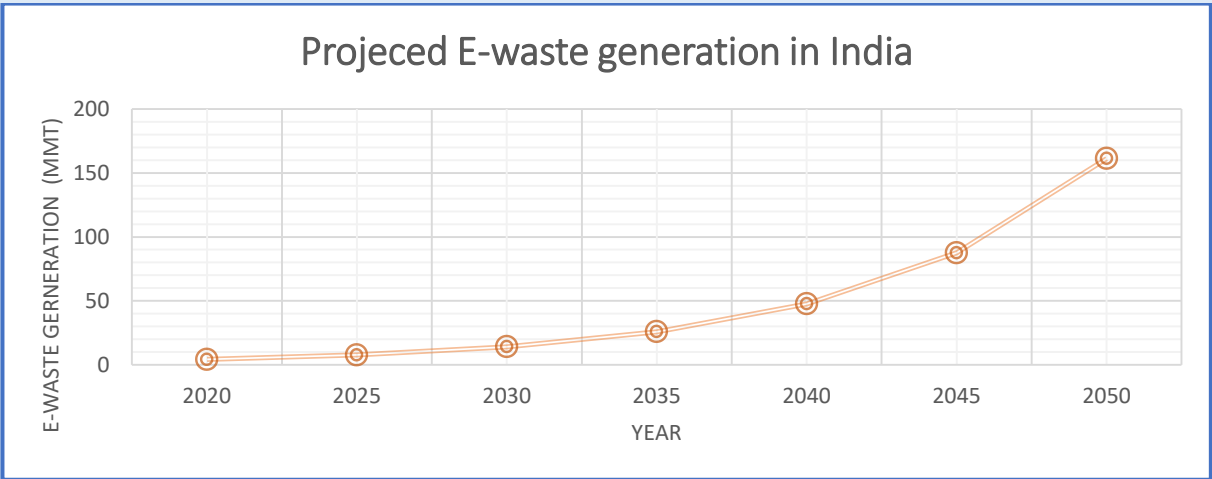
With the spread of the internet, digital learning and a world built of data, the number of products consumed in telecommunication and Information Technology is in the projected phase. There is a leap increase in software service centres from 38.7% in 1998-99 to 61.8 % in 2003-04. This results in creating a scenario of handling a vast amount of e-waste. As per ASSOCHAM report (2018; Fig 2), the e-waste generated in India is mainly from ten states. Future projection shows that by 2040, carbon emissions from electronics production are expected to be 14% of total emissions, nearly half of the global transport sector. Developed

countries such as North America, Western Europe, Japan, South Korea, Australia send e-waste to developing countries; India and China receive the bulk of the e-waste.



**Fig 2** *Source: Electrical and Electronics manufacturing in India, ASSOCHAM & NEC Technologies, 2018*

The Solar power sector is blooming in India, the world's fifth-largest solar power user. 61 GW of solar capacity is commissioned in India; an additional 44 GW increase can bring India to the top three. It was assumed that waste generation in solar power sector happens at the end of its life cycle. However, it has been found that the manufacturing scrap module damaged during the start of the supply chain can produce waste at the early end of life. India has brought a new rule of inclusion of solar cells in the e- waste. Solar module producers are legally responsible for waste handling. Until 2034-35 the producer has to store the waste, which must also be maintained in the CPCB inventory.



**Fig 3** *Source: CSE 2020*



In India, the e-waste management still revolves around the informal sector involving children, women and aged people, causing health effects to the vulnerable population. The E-waste management rules are a great foundation to bring it into a formal and well-structured system. The EPR rule, which make the process responsible for waste management, has brought in good governance, but the capacity needs to be increased. 94 Producer Responsibility Organisations(PROs) are registered with CPCB, and 569 recyclers or dismantlers with nearly 1.8 million metric ton capacity per annum.



***Fig 4: Waste workers dismantling E-waste***

Better e-waste management is a way towards the Sustainable Development Goals (SDGs) developed by United Nations. Reduction of waste generation through prevention, reduction, recycling, and reuse by 2030 focused on a target of 12.5% and promotion of sustainable economic growth by improving resource efficiency and reducing waste generation by a target of 8.4 % is achieved through this.

Judicial consumption of the products is the need of the hour with the rise in climate change. However, some precautions could reduce the environmental impacts it causes. 1. As a responsible public, we should take action to increase the life of the electric equipment. 2. Charging laptops and mobile phones at less than 20% and switching off before reaching 100% increases the battery cycle. 3. A stringent action to permit recycling to only those who possess a recycling license issued by CPCB 4. Publishing of recycling numbers in the annual reports of companies 5. The government extended incentives for scientific recycling 6. Ban of export of printed circuit board for premium metal recovery 7. Investment in R&D or technical upgradation towards a system to build a circular economy. 8. Creating an ecosystem with a capacity which meets the growing consumption of electronic goods with extensive infrastructure.

**Acknowledgement;** EIACP team thankfully acknowledge the compilation of Ms. Anu Varghese, Project Associate, MAQWS@ IITM, on E-Waste

## Events and Activities of IITM-EIACP PC-RP, Pune

- **EARTH DAY – 2023:** Earth Day is a day of action and a reminder for everyone to reflect on the impact of human activity on the planet. It is also a day to



celebrate our beautiful planet and take action to preserve it. IITM-EIACP PC-RP had arranged an informative talk on “Good practices of handling and various ways of recycling E-waste” by the expert in e-waste recycling Mr. Manoj Mehta, Chief Managing Director, Mahalaxmi E Recyclers Pvt Ltd, Pune to students of class 10th. Around 40+ students and teachers participated in the event. Also, during the session, he briefed the audience about the step-by-step process of e-waste recycling and dismantling the e-waste. He explained the overview of the dismantling and recycling process as Collection and Sorting, Manual Disassembly, Hazardous Waste Removal,

Material Separation, Recovery of Valuable Materials, Refining Processes, Safe Disposal of Residues, Data Destruction, Environmental Compliance, Certified Recycling Facilities etc. We also organized a drawing competition for students on “Reducing E-Waste towards Sustainable Lifestyle” at this event. All students participated in the drawing competition and the top 10 winners were rewarded with gifts and certificates.

- **WORLD MIGRATORY BIRD DAY 2023:** Migratory Bird Day (WMBD) is an annual global event that raises awareness about the conservation of migratory birds and their habitats. This event helps educate people about these issues and encourages them to take action to protect these birds. This year's theme for the day is “Water and its importance for Migratory Bird”, as water is fundamental to life on our planet. To observe the WMBD, IITM-EIACP PC-RP, Pune conducted a National Level Online Drawing Competition for the students, researcher and common public on the theme “Water: Sustaining Bird Life”. 140+



participants participated in two categories. Top 10 winners from each category were awarded with a gift and certificate.

- **WORLD ENVIRONMENT DAY – 2023:** IITM-EIACP Programme Centre Resource Partner, Pune has observed the World Environment Day 2023 by conducting various awareness activities towards environmental protection.



- 1) Online Talk on “Good practices of handling and various ways of recycling E-waste”: The Centre arranged an Online Talk on “Good practices of handling and various ways of recycling E-waste” by an expert in e-waste recycling for students, IITM staff and the common public.
- 2) Launch of E-Waste Collection Drive: The Centre initiated the E-waste collection drive at office premises and IITM colony on this occasion. Dr. R. Krishnan, Director, IITM launched the E-waste collection drive by dropping some electronic waste material in the E-waste bin. Dr. B. S. Murthy, EIACP Coordinator & Sci ‘F’, IITM, Mr. Manoj Mehta, CMD, Mahalaxmi E Recyclers Pvt. Ltd., Pune, and other official staff of IITM were present on the occasion.
- 3) Tree Sapling Plantation Drive: The Centre conducted a tree sapling plantation drive in two phases to observe "World Environment Day 2023" under "Mission LiFE Movement 2023". In the first phase, we planted tree

saplings of various fruits Like Guava, Custard Apple, Mangos, Ramphal, Indian Blackberry (Jamun), Cacao, etc., in the IITM premises.

4) *Climate Change Action Pledge*: All volunteers, senior officials and other IITM staff have taken the Climate Change Action Pledge. All who took the pledge were given certificates and badges for motivation.

5) *Tree Sapling Distribution Drive*: The second phase was the Tree Sapling Distribution Drive at IITM premises for all staff and their family. Around 25+ types of saplings were distributed to everyone. Display of Mission LiFE Posters and drawings made by students to understand the importance of preserving our natural resources, inspire action, and encourage individuals to become stewards of the environment.

• **INTERNATIONAL YOGA DAY 2023: IITM-EIACP Programme Centre Resource**



Partner has participated in 9th International Day of Yoga held by Indian Institute of Tropical Meteorology, Pune on 21st June 2023 with great enthusiasm. Yoga session was conducted by Shri. Bhupendra Bahadur Singh, Sci 'E', IITM, Pune.



IITM-EIACP PC-RP, Pune has designed and developed a jingle on e-waste to leverage the power of music and storytelling to raise awareness, inspire action, and engage a global audience in the collective effort to address the challenges of e-waste.

Link for the Jingle: <https://youtu.be/j1dnKgqtWsE>

All queries and feedback addressed to:

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