

Executive Summary - White Paper on National EPR framework for E-waste Management in India

With the increasing usage and dependence on electronic equipment, humans have been generating e-waste at unprecedented rates. In 2019, the reported generation of e-waste was 53.6 million metric tonnes (MT) (Forti et al., 2020). E-waste problem is much severe in developing countries that have deployed rudimentary processing technologies and improper e-waste handling and management. The recorded generation of e-waste in India was 1.02 million MT in 2019-2020, increasing at a rate of nearly 32.5% per annum (CPCB, 2020).

Electrical and Electronic Equipment (EEE) are intricate devices consisting of rare, valuable critical raw materials (CRM) which are difficult to extract. The rate of extraction of raw minerals for EEE production is significantly higher than the rate of their formation in nature. It is estimated that by 2050, the rate of consumption of resources would be three times higher than the rate at which earth can replenish and by 2060 the global consumption of materials such as metals and minerals would double (MeitY, 2021). Hence, it is essential to incorporate circularity in e-waste management – something which is missing from the current e-waste legislation in India as it majorly stresses on increasing the recycling rates rather than extending the life of EEE.

The current regulations on e-waste management in India are defined under E-Waste (Management) Rules, 2016. These rules lay down 21 types of EEE within their jurisdiction. They also introduced and mandated the concept of EPR for e-waste management, by defining the collection targets for brand owners and producers. The rules also state the proper channelization of e-waste right from generation till recycling/disposal. Despite releasing proper rules and regulations for e-waste management, the current situation of e-waste management in India is still underwhelming, with majority of WEEE leaking into the informal sector unaccounted. These informal workers indulge in processing e-waste in an unscientific manner, harming the environment and also curtailing resource efficiency. Additionally, EPR is not being exercised properly due to lack of infrastructure and transparency within the e-waste value chain, along with limited responsibility sharing amongst the stakeholders.

The white paper on national EPR framework in India looks at the entire value chain for e-waste management in India and aims to present an updated circular and responsibility sharing roadmap incorporating the inputs of various stakeholders within the e-waste value chain. The key recommendations of this white paper are presented below:

- Introduction of Advanced Recycling Fee (ARF) which is to be shared by waste generator and producer. ARF needs to be calculated by PROs, waste collectors and recyclers/dismantlers on the basis of materials handling and recycling cost.
- For improving the monitoring mechanism, a digital database needs to be developed which accounts for the materials utilized within the generated e-waste, rather than just monitoring the mass of waste generated.

- CPCB and SPCBs are the nodal institutions for e-waste management. Introduction of an additional e-waste management task force is essential to support CPCB/SPCBs in decision making, auditing of PROs, recyclers/dismantlers. This e-waste management task force can comprise of empaneled institutions and e-waste sector experts. Their other tasks may include:
 - Quantifying and monitoring e-waste by compiling information from the SPCBs and CPCBs;
 - Predict the e-waste generation by understanding the sales of electronics by various brands;
 - Overlook recyclers and dismantlers by audits and have the authority to impose fines and even cancel registrations if the other party is found guilty;
 - Undertake capacity building and training exercises for all the involved stakeholders;
 - Suggest technology and infrastructural development by identifying the hotspots;
- Setting up standards for recyclers, dismantlers and also PROs in order to distinguish the compliant from non-compliant institutions and penalizing the latter.
- Eco-designs of EEE must be promoted and incentivized to reduce cost of recycling, encourage resource efficiency, and circular economy. Additionally, brand owners and producers must look for extending the life of materials. Also, businesses must look to adopt a lease base model for acquiring their work stations. This will ensure proper EoL management and also curtail the flow of e-waste into the informal sector.
- Refurbishers must be addressed as key stakeholders in e-waste regulations and the flow of e-waste must be channeled through refurbishers to recyclers/dismantlers to ensure circularity within e-waste value chain.
- On account of shared responsibility, ULBs also need to be incorporated as key stakeholders in e-waste management since a major portion of e-waste generators are households.
- Development of mechanisms for monitoring and reviewing the set collection targets along with the legislations for e-waste management.

Building on the vision of shared responsibility, the success of the proposed framework requires cooperation from national, state, and city governments, brand owners and producers, industries and other waste generators, e-waste recyclers and dismantlers along with the informal sector. The concept of circularity and resource efficiency needs to be thoroughly embedded into the e-waste regulations in order to foster the implementation of the national framework. Finally, there is also a requirement for regular, systematic monitoring of the action points along with the collection and analysis of data in the context to determine the efficacy, and the need for adjustment in the actions defining the framework.