Chapter - 17

E waste management in India

E-waste management in India involves the collection, transportation, recycling, and disposal of electronic waste, such as discarded computers, mobile phones, and other electronic devices. The process is regulated by the E-Waste (Management) Rules, 2016, which emphasize the responsibilities of producers, consumers, and recyclers to ensure environmentally sound handling of e-waste, reducing its impact on health and the environment.

Introduction

- Expansion in the IT and communication sectors has improved the usage of the electronic equipment exponentially. Faster upgradation of electronic product is compelling customers to abandon old electronic products very swiftly, which, in turn, increases the amount of e-waste in the solid waste stream. The growing concern of e-waste demands for grander stress on recycling e-waste and improved e-waste supervision.
- E-waste is any electrical or electronic equipment that's been castoff. This comprises operational and damaged items that are flung into the trash or donated to a charity reseller. Every so often, if the item goes unsold in the store, it is discarded. E-waste is chiefly hazardous due to toxic elements that naturally percolate from the metals inside when buried under the ground.
- Electronic waste or e-waste is generated when electronic and electrical equipment become damaged for their efficient utilization or have crossed their expiry time. Computers, servers, mainframes, monitors, compact discs (CDs), printers, scanners, copiers, calculators, fax machines, battery cells, cellular phones, transceivers, TVs, iPods, medical apparatus, washing machines, refrigerators, and air conditioners are illustrations of e-waste (when no longer fit for utilization).
- E-waste normally comprises of metals, plastics, cathode ray tubes (CRTs), printed circuit boards, cables, and so on. Valuable metals such as copper, silver, gold, and platinum could be salvaged from e-wastes, if they are methodically managed. The occurrence of toxic constituents such as liquid crystal, lithium, mercury, nickel, polychlorinated biphenyls (PCBs), selenium, arsenic, barium, brominated flame retardants, cadmium, chrome, cobalt, copper, and lead, makes it very dangerous, if e-waste is undone and administered in a crude method with simple practises.

E-Waste Issue in India

- India ranks 177 amongst 180 countries and in midst the bottom five nations on the Environmental Performance Index 2018, as per a study presented at the World Economic Forum 2018. This was connected to insufficient performance in the environment health policy and deaths due to air pollution and associated reasons. Also, India is ranked 5th in the world amongst top e-waste producing countries after the USA, China, Japan, and Germany and recycles less than 2 % of the total e-waste it produces annually formally. Since 2018, India generates more than 2 million tones of e-waste yearly, and also imports enormous amounts of e-waste from other nations around the world. Dumping in open dumpsites is a usual sight which escalate to issues such as groundwater contamination, poor health, etc.
- Seelampur in Delhi is the largest e-waste disassembling center of India. Adults as well as children spend 8-10 hours daily removing recyclable constituents and valuable metals like copper, gold and various useful parts from the devices.
- Influence of Recycling E-Waste in Developing World
- Nearly all e-wastes comprise some form of recyclable material, including plastic, glass, and metals; however, due to inappropriate discarding procedures and methods these materials cannot be salvaged for other resolutions. If e-waste is dismantled and handled in a crude way, its contaminated components can wreak chaos on the human body. Processes such as dismantling constituents, wet chemical processing, and incineration are used to discard the waste and outcome in direct exposure and inhalation of dangerous chemicals. The health hazards range from kidney and liver damage to neurological ailments. Recycling of e-waste scrap is contaminating the water, soil, and the air. Burning to recover metal from wires and cables has led to the discharge of brominated and chlorinated dioxins as well as carcinogens which adulterate the air and, thus, cause cancer in humans and animals.

Prospects of E-Waste Management in India

- The Ministry of Environment, Forest and Climate Change bowled out the E-Waste (Management) Rules in 2016 to decrease e-waste production and increase recycling. Under these rules, the government announced EPR which makes manufacturers accountable to collect 30 percent to 70 percent (over seven years) of the e-waste they manufacture.

- The incorporation of the informal sector into a transparent recycling system is crucial for a better control on environmental and human health influences. There have been some efforts towards assimilating the current informal sector in the emergent picture. E-waste is a rich source of metals such as gold, silver, and copper, which can be recovered and introduced back into the production cycle. There is noteworthy economic potential in the efficient recovery of valuable materials in e-waste and can provide income-generating opportunities for both individuals and enterprises. The E-Waste Management Rules, 2016 were modified by the government in March 2018 to enable and effectually implement the environmentally sound management of e-waste in India.

Role of Government, Administration and the Common People

- Bearing in mind the adversarial impacts caused by unprocessed e-waste on land, water, and air; the government should inspire the new entrepreneurs by providing the essential economic funding and technological supervision. Formation of start-ups associated with e-waste recycling and disposal should be fortified by giving special allowances. The unorganized sector has a deep-rooted collection system. But it is capital-intensive in case of organized sector. Therefore, if both the sectors synchronize and work in a harmonious way, the constituents collected by the unorganized sector may be passed over to the organized sector to be managed in an eco-friendly way. In this kind of scenario, the government can play a critical role between the two sectors for effective handling of the e-waste. It is high time that the government takes an active initiative to recycle and dispose of e-waste safely to safeguard the environment and confirm the well-being of the general public and other living organisms.

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- The common people have a very significant part to play in e-waste management. We nonchalantly fling many small gadgets along with dumped waste and many people openly burn those amassed waste. A number of hazardous elements such as dioxins and furans are released in the process into the air which we breathe. This is a very morbid practice, which we should instantaneously stop. Some of the very liberal Resident Welfare Associations (RWAs) have distinct bins clearly marked for collecting e-wastes. All the other residential societies should follow this exercise. Students and Women SHGs can be organized for this activity in their respective RWAs.

Conclusion

E-waste management is a great task for governments of many emergent countries such as India. This is becoming an enormous public health issue and is markedly increasing by the day. In order to independently collect, effectively treat, and dispose of e-waste, as well as deter it from conventional landfills and open burning, it is vital to incorporate the informal sector with the formal sector. The capable authorities in developing and transition countries need to launch mechanisms for handling and treatment of e-waste in a harmless and sustainable manner.