Analysis and Importance of E-Waste Management

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ABSTRACT:

What is electronic waste? Basically ‘E-Waste’ stands for ‘Electronic waste'.-

Electronic devices like washing machines, television, radio etc. This electronic devices help in our household work as well as in the professional work. In our India country, there are various cities like Mumbai which contribute to maximum e-waste production annually or yearly. The electronic waste is generated from number of electronic gadgets we use in our daily life. We are bounded by this electronic devices. In this paper I have done my research and brief study on topic of analysis of e-waste management, also importance of e-waste management.Many groups and governments from various nations have implemented a variety of ways to address the problem and threat to the environment and human health. Hence, this review presents a compendium of various sources of E-waste, environmental hazards, its composition and characterization, E-waste scenarios in India and global world. For the sake of the future, techniques of handling and processing, as well as E-waste recycling, should be used. This paper mainly outlines the issue of E-waste also covering the improvement and plan to tackle the issues.

1. INTRODUCTION:

Fig1. Electronic waste.

The Let us the term of ‘E-waste”. It can be stand’s for the ‘electronic waste’ as well as it is called as the

‘Electronic Garbage. The Electronics devices like washing machines, radio, Iron, Dishwasher, speakrs, freeze, Television, computers, Laptops etc. When this list of devices stop working or when they are discarded or when we do not need them then this devices are considered to be the ‘E- waste’ as well as the Electronic waste. This all electronic device is not properly disposed of then it can cause various types of diseases, like weakness of bones, damage to liver and heart, nose cancer, brain cancer. All type of diseases can be caused by electronic waste.Every year millions of electrical and electronic devices are discarded as products break or become obsolete and are thrown away. These discarded devices are considered e-waste and can become a threat to the environment and to human health if they are not treated, disposed of, and recycled appropriately. Common items in e-waste streams include

computers, mobile phones, and large household appliances, as well as medical equipment. Every year, millions of tonnes of e-waste are recycled using environmentally unsound techniques and are likely stored in homes and warehouses, dumped, exported or recycled under inferior conditions. When e-waste is treated using inferior activities, it can release as many as 1000 different chemical substances into the environment, including harmful neurotoxicants such as lead (3). Pregnant women and children are particularly vulnerable due to their unique pathways of exposure and their developmental status. The International Labour Organization (ILO) estimates that 16.5 million children were working in the

industrial sector in 2020, of which waste processing is a subsector.

WHY E-WASTE IS HARMFUL?

The chemicals that are present in electrical and electronics products are toxic for both the environment and humans. Most products contain chemicals such as mercury, cadmium, lead, brominated flame retardants, and beryllium. When mishandled, they get mixed with water, soil and air. Due to E-waste most dangerous problems can be created in our environment as well as in our society. Additionally, the harmful effects of e-waste are only increasing due to illegal export to countries for disposal. Inevitably, more e-waste dumped into water bodies, more toxin traces show up in groundwater.E-waste contains valuable materials, as well as hazardous toxins, which make the efficient material recovery and safe recycling of e-waste extremely important for economic value as well as environmental and human .

TYPES OF E-WASTE:

The different types of E-waste management shown in below flow chart :-

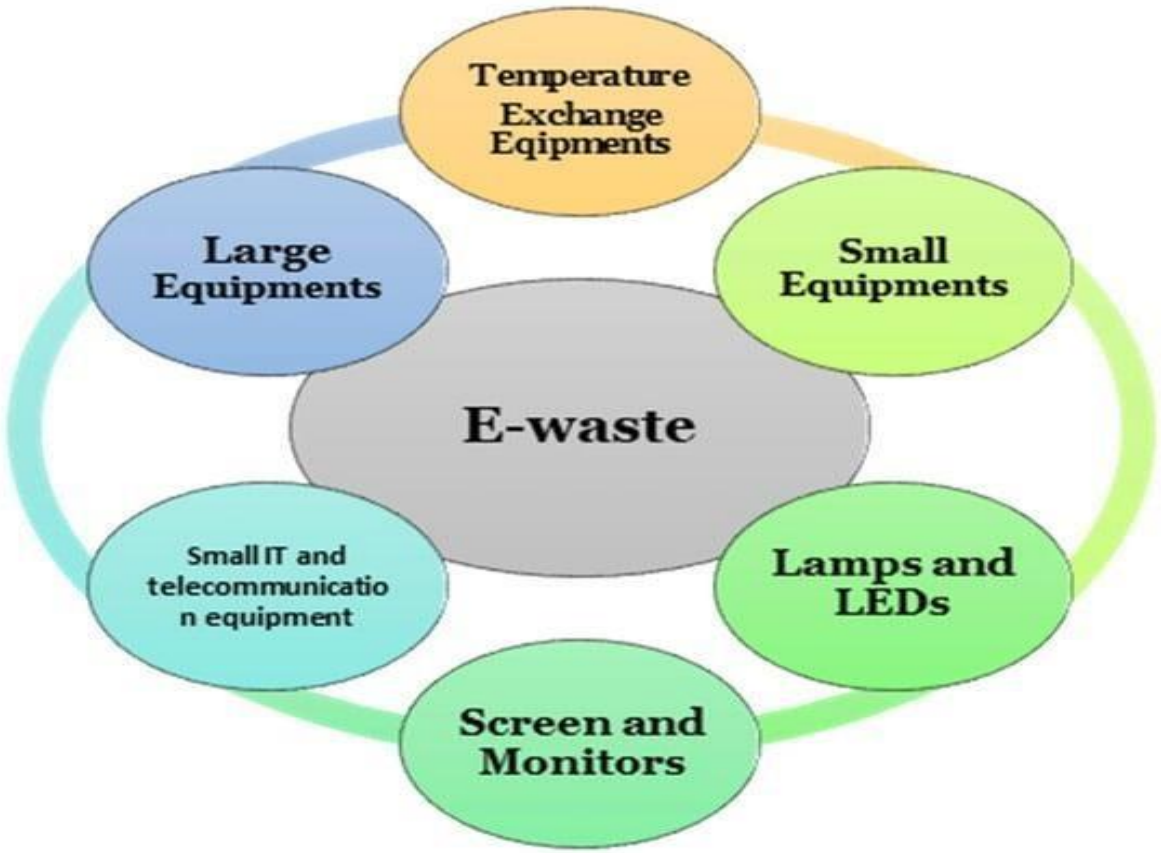

Fig 2.Different Types Of E-waste

As shown in above diagram, given the different types of E-waste. due to this all equipment quantity of E-waste can be increase day by day. This is harmful for human beings.

ANALYSIS OF E-WASTE MANAGEMENT:

The recycling of e-waste can be carried out in two ways viz. under controlled conditions and under un-controlled conditions.It is under the controlled conditions there are two methods. In the first method, the e-waste is dismantled first and later mechanically processed in order to separate/recover the materials. In the second method, the metallurgical processes are used in order to recover the metals. The other processes are also followed in order to recover plastics and other useful all type materials.the process of the e-waste management can be diveded into many method

E-waste management methods:

(1)Secured land-filling. (2)Insinuation. (3)Recycling.

(4)Metal recovery by acid. (5)Reuse.

1. Secured land-filling:

The e-waste is built on flat land and the pits are pressed into the soil by putting the e-waste in it. Should be pressed.

2. Insinuation:

In this process, the e-waste is lit in a fully closed chambertto inside the insulator at a temperature of 900 to 1000 degree centigrade. Due to this the quantity of e-waste is reduced considerably and the toxicity of the organic substance present in it is reduced significantly.The smoke and gas coming out of the chimney in the injector is passed through the Air Pollution Control System (APCS) and the various types of metals present in the smoke are separated by chemical action and the gases are treated.

3. Recycling:

— Devices like such as electronic waste, monitors, picture tubes, laptops, keyboards, T. V,telephones, hard drives, CD drives, fax machines, printers, CPUs,

modem cables etc. can be recycled. In this process, various metals and plastics are sabotaged separately and preserved for reuse.

4. Metal recovery by acid:

5. Different types of parts likeferrous and non-ferrous metal and printed circuit boards are separated by electronic waste.Different types of metals like lead, copper, aluminum, silver, gold, platinum, etc. are used for the recovery of the all types of metals by use concentrates.Residues the plastic waste is recycled for reuse to this process the recycled e-waste can be properly ready for the reusing. It can be very useful process.

6. Reuse:

Old electronic devices are repaired and made for reuse.Such as computers, mobiles, laptops, inkjet cartage, radio, speaker inverter, television,LCD, UPS, printers, etc. can be properly reused and reused.So, by implementing above mention 5 ways you can easily dispose of, recycle & reused your e-waste efficiently which not only helps you to reuse but also helps to keep the environment clean & safe. The reuse of the e-waste is very helpful for decrease the electronic waste. The reuse of the electronic waste can be useful for environment and human being. Due to this decrease the level of e-waste.

4 .LITRATURE REVIEW:

In a study by Jalal Uddin (2012), it can be Through innovative changes in the

product style below EXTENDED PRODUCER RESPONSIBILITY (ERP),
use of environmentally friendly substitutes for dangerous substances, these impacts can be mitigatedl. All the legal framework must be there for imposing EPR, RoHS for attaining this goal. Adoption of the a about environmentally all sound technologies for usage and employ of e-waste at the side of EPR and RoHS offers workable answer for environmentally sound management of e-waste. Manufacturers & suppliers need to set goals for reducing electronic waste. Encourage them to buy back the old electronic products from consumers, disposing bulk e-waste only through authorized recyclers and send non tradable e-waste to authorized the private developers for final disposal. According Vijay N. Bhoi et al. (2014), most of the waste is inherently dangerous. It will degrade to provide leachate, which can contaminate water, and make lowland gas, that is explosive. Additionally, owing to the risks related to lowland sites, there are currently terribly strict needs on the all type of development, operation and medical care of such sites. Most designing authorities desire a figured out quarry to be used for landscaping instead of a lowland web site that nobody desires in their “backyard”.
Product style should be used to assist to reduce not solely the character and quantity of waste, however conjointly to maximize end-of-life utilization.
The Makers, retailers, users, and disposers ought to share responsibility for reducing the environmental impacts of merchandise.product-centred approach ought to be adopted to preserve and shield setting. The preservation of the environmental source as well as the human beings. The e-waste management is very helpful for future.

5. IMPORTANCE OF E-WASTE MANAGEMENT:

Electronic waste, or e-waste, is becoming an increasingly pressing problem globally. It refers to discarded electronic devices such as computers, mobile phones, and televisions, which contain hazardous materials that can cause environmental and health hazards. With the rapid pace of technological innovation and the increasing demand for electronics, e-waste has become one of the fastest-growing waste streams globally. Explore the importance of managing e-waste, the challenges faced in its management, and the future of e-waste management. Due to the e-waste management, the level of discarded products like electrical or electronic is easily decomposed then, reused by the recycling of this products. E-waste management is helpful for environment also, because the hazardous gasses can spread from the discarded e-waste are totally stopped. Recycling e-waste is an essential measure in the fight against environmental damage. By recycling electronic devices, we prevent the release of hazardous materials into the environment, safeguarding ecosystems and human health. It is a crucial practice contributing to a cleaner, more sustainable future. The different methods of E-waste management for recycling of the discarded and hazardous electronic as well as the electrical waste.

ADVANTAGES OF E-WASTE MANAGEMENT:

(1) Saves the environment and natural resources.

(2) Allows for recovery of precious metals .

(3) Protects public health and water quality .

(4) Save the landfill space.

(5) Increase employment.

(6) Save natural resources.

(7) The sorting of e-waste will provide above valuable materials which make up a great amount of economical incentive.

(8) Due to recycling of E-waste, the level of hazards of electronic & electrical products decrease.

6. DISADVANTAGES OF E-WASTE MANAGEMENT:

(1) Health hazards to humans due to undisposed e-waste.

(2) Environmental impacts while recycling e-waste which leads to hazards/risks to humans.

(3) There are chemicals in the e-waste, after recycling which are very harmful.

(4) There is a risk associated with placing e-waste on the land-fills.

CONCLUSION:

India faces a growing challenge in managing electronic waste (E-waste) due to the rapid proliferation of electronic devices. To address this above all issue, various recycling methodologies have been implemented in the country. The different types of methods can be working for recycling this discarded or hazardous electronic material.. E-waste recycling in India is complex but vital endeavor to manage electronic waste responsibly. It requires a multi-pronged approach involving formal and informal sectors, government regulations, corporate responsibility, public participation, and ongoing innovation. The e-waste is not completely treated or recycled in India itself, the author looks towards it, as an opportunity. According to the above information, e-waste is very harmful for human beings. The use of this electronics as well as the electrical instrument is not totally stopped by humans, but the quantity of the use of this product is decreasing. This solves many problems, which can be very harmful as well hazardous for the environment and the people's also. The process of E-waste management is to help for recycling and reusing the discarded products of the e-waste. etc conclusion comes from the of ‘analysis and importance of the e-waste or electronic waste.

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