2. Management of various types of degradable and non-degradable Waste:

Biodegradable Waste Pit:

Our college has a designated biodegradable waste pit where organic waste such as food scraps, paper, and plant materials are deposited.

Non-Biodegradable Waste Pit:

In order to properly manage non-biodegradable waste, our college has a separate pit specifically designed for items that do not break down naturally, such as plastic bottles, aluminium cans, and glass containers. This pit ensures the proper containment of non-biodegradable waste, allowing for potential recycling or responsible disposal methods.

E-waste Management:

Our college disposed of e-waste through an agency. One of our staff members published a paper on E-waste: A Global Hazard.

POSTULATE

22-03-2022

To

The Principal,

Don Bosco College of Arts and Science,

Keela Eral,

Dear Madam,

Sub: E-Waste – Received – Reg

With reference to the service report of Computer Lab, the following items are received as ruined.

S. No	Item Description	Quantity	Status
1	Internal Hard Drive 500GB	3	Irreparable
2	SMPS	16	Irreparable
3	LCD 13" Monitor	4	Not Working
4	LCD 15.6" Monitor	1	Not Working
5	Mother Board	18	Irreparable
6	Keyboard	17	Irreparable
7	Mouse	8	Irreparable
8	Cabin	12	Irreparable

We assure that, the above electronic components to be disposed / recycled according to the guidelines prescribed by government.

Thank you

For POSTULATE INFO TECH

POSTULATE INFO TECH PRIVATE LIMITED

Authorised Signature

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MERC Global

E-waste: A Global Hazard

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ABSTRACT

Electronic waste, or e-waste, is a term for electronic products that have become unwanted, non-working or obsolete, and have essentially reached the end of their useful life. Because technology advances at such a high rate, many electronic devices become "trash" after a few short years of use. Obsolete electronic devices are rapidly filling the landfills of the globe. Most electronics that are improperly thrown away contain some form of harmful materials such as beryllium, cadmium, mercury and lead. These materials might be trace elements, but when added up in volume, the threat to the environment is significant. The problems that may be created by e-waste are compounded by modern technology's continuous flux and obsolescence. Frequent replacement of mobile phones and computers are but a few examples. As such, e-waste poses a critical issue in terms of solid waste management. The Environmental Protection Agency estimates that only 15-20% of e-waste is recycled, the rest of these electronics go directly into landfills and incinerators. The electrical waste contains hazardous, but also valuable and scarce materials. Up to 60 elements can be found in complex electronics. In the United States, an estimated 70% of heavy metals in landfills come from discarded electronics.

KEYWORDS: Electronic waste, Heavy metals.

1. INTRODUCTION

Electronic waste, e-waste, e-scrap, or waste electrical and electronic equipment describes discarded electrical or electronic devices. There is a lack of consensus as to whether the term should apply to resale, reuse, and refurbishing industries, or only to product that cannot be used for its intended purpose. There are some significant issues associated with our use of electronic devices in such huge numbers. Consumption decisions have a direct impact on the environment as we take more and more precious metals to make electronic products, but recycle so little. These hazardous and other wastes pose a great threat to human health and the environment. The issue of proper management of wastes, therefore, is critical to the protection of livelihood, health and the environment

1.1. Concept of e-waste

E-waste is any refuse created by discarded electronic devices and components as well as substances involved in their manufacture or use. The disposal of electronics is a growing problem because electronic equipment frequently contains hazardous substances.

2. OBJECTIVES OF THE STUDY

- To know the global problem of e-waste.
- To study the impacts of e-waste.

- To study the classification of e-waste.

3. PROBLEMS SURROUNDING E-WASTE

Growing sources of e-waste present a number of considerable problems:

- **Increases the need to mine finite resources:** Cellphones, computers, and other technological products contain a number of valuable materials that must be mined. Rare earth, gold, palladium, copper, and more all reside within our cell phones, TVs, and more. These valuable materials are acquired through intensive mining operations. The recycling of such materials from our old gadgets would allow us to reuse these valuable materials, ultimately requiring less mining and conserving our finite resources. According to the EPA, the recycling of one million cell phones yields 35,000 lbs. of copper, 772 lbs. of silver, 75 lbs. of gold, and 33 lbs. of palladium. Do something orgclaims that over $60 million in gold and silver in the form of phones is dumped by Americans annually.
- **Encourages hazardous working conditions:** Despite efforts to thwart such practices, many of our out-dated electronics end up in developing nations, where legislation around e-waste is lax or even non-existent. Here, workers sort through the products by hand or use crude processing methods to recover the desired components – a highly toxic endeavour. A recent study by the Basel Action Network (BAN), in which GPS trackers were put on items of e-waste and then donated or brought to recycling centers, found that 40% of the items delivered to US recyclers were exported, 93% of which went to developing countries.
- **Endangers the environment:** The toxic components in e-waste not only pose risks to workers in developing nations, but they also pose risks to the environment; where e-waste is either improperly handled or disposed of, there is a risk of soil and groundwater contamination. Mercury, lead, cadmium, and other components have the potential to seep into soil and groundwater, contaminating these valuable resources.

4. IMPACTS ON HUMAN HEALTH

The complex composition and improper handling of e-waste adversely affect human health. A growing body of epidemiological and clinical evidence has led to increased concern about the potential threat of e-waste to human health, especially in developing countries such as India and China. The primitive methods used by unregulated backyard operators (e.g., the informal sector) to reclaim, reprocess, and recycle e-waste materials expose the workers to a number of toxic substances.

Processes such as dismantling components, wet chemical processing, and incineration are used and result in direct exposure and inhalation of harmful chemicals. Safety equipment such as gloves, face masks, and ventilation fans are virtually unknown, and workers often have little idea of what they are handling.

For instance, in terms of health hazards, open burning of printed wiring boards increases the concentration of dioxins in the surrounding areas. These toxins cause an increased risk of cancer if inhaled by workers and local residents. Toxic metals and poison can also enter the bloodstream during the manual extraction and collection of tiny quantities of precious metals, and workers are continuously exposed to poisonous chemicals and fumes of highly concentrated acids

Recovering resalable copper by burning insulated wires causes neurological disorders, and acute exposure to cadmium, found in semiconductors and chip resistors, can damage the kidneys and liver and cause bone loss. Long-term exposure to lead on printed circuit boards and computer and television screens can damage the central and peripheral nervous system and kidneys, and children are more susceptible to these harmful effects.

4.1. Environmental impacts

Although electronics constitute an indispensable part of everyday life, their hazardous effects on the environment cannot be overlooked or underestimated. The interface between electrical and electronic equipment and the environment takes place during the manufacturing, reprocessing, and disposal of these products. The emission of fumes, gases, and particulate matter into the air, the discharge of liquid waste into water and drainage systems, and the disposal of hazardous wastes contribute to environmental degradation. In addition to tighter regulation of e-waste recycling and disposal, there is a need for policies that extend the responsibility of all stakeholders, particularly the producers, beyond the point of sale and up to the end of product life. There are a number of specific ways in which e-waste recycling can be damaging to the environment. Burning to recover metal from wires and cables leads to emissions of brominated and chlorinated dioxins, causing air pollution.

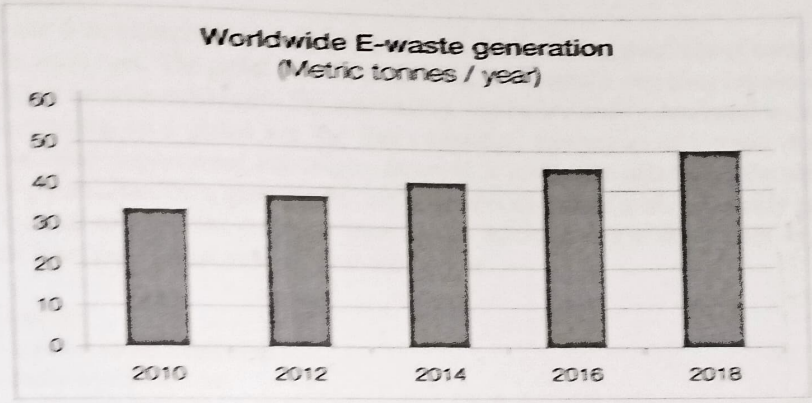
During the recycling process in the informal sector, toxic chemicals that have no economic value are simply dumped. The toxic industrial effluent is poured into underground aquifers and seriously affects the local groundwater quality, thereby making the water unfit for human consumption or for agricultural purposes.

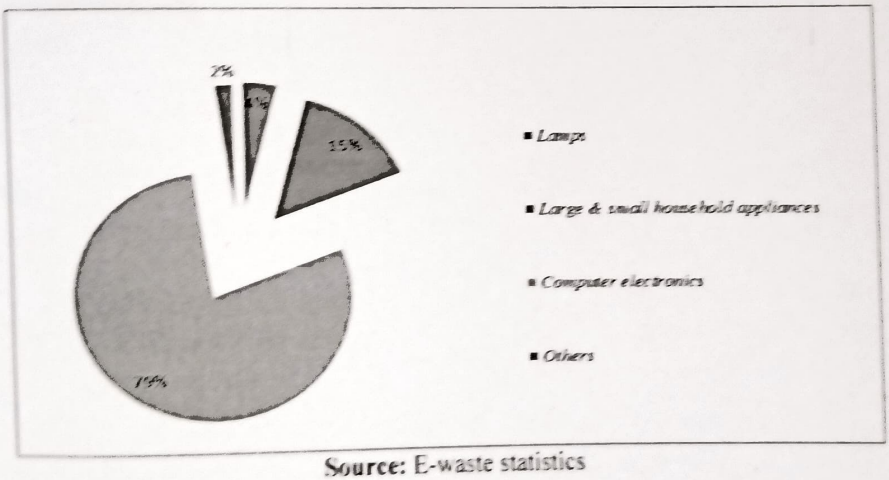
Atmospheric pollution is caused by dismantling activities as dust particles loaded with heavy metals and flame retardants enter the atmosphere. These particles either redeposit (wet or dry deposition) near the emission source or, depending on their size, can be transported over long distances. The dust can also enter the soil or water systems and, with compounds found in wet and dry depositions, can leach into the ground and cause both soil and water pollution. Soils become toxic when substances such as lead, mercury, cadmium, arsenic, and polychlorinated biphenyls (PCBs) are deposited in landfills.

4.2. E-waste – a rapidly escalating problem

Findings in the UNU report point to a clear, steady growth trend in e-waste, which is projected to continue at a rate of two million metric tonnes per year. This would mean almost 50 million metric tonnes by 2018.

Of total e-waste, approximately one quarter – or 9.3 million metric tonnes – is made up of personal digital devices such as computers, displays, smartphones and tablets and TVs. Household appliances, as well as heating and cooling equipment, account for the remainder.





Source: E-waste statistics

5. CLASSIFICATION

E-waste can be classified on the basis of its composition and components. Ferrous and nonferrous metals, glass, plastics, pollutants, and other are the six categories of materials reported for e-waste composition. E-waste in the following categories:

- **Large household appliances:** refrigerators, freezers, washing machines, clothes dryers, dishwashers, electric cooking stoves and hot plates, microwaves, electric fans, and air conditioners.

- **Small household appliances:** vacuum cleaners, toasters, grinders, coffee machines, appliances for hair cutting and drying, tooth brushing, and shaving.
- **Information technology (IT) and telecommunications equipment:** mainframes, minicomputers, personal computers, laptops, notebooks, printers, telephones, and cell phones.
- **Consumer equipment:** radios, televisions, video cameras, video recorders, stereo recorders, audio amplifiers, and musical instruments.
- **Lighting equipment:** straight and compact fluorescent lamps and high-intensity discharge lamps.
- **Electrical and electronic tools:** drills, saws, sewing machines, soldering irons, equipment for turning, milling, grinding, drilling, making holes, folding, bending, or similar processing of wood and metal.
- **Toys, leisure equipment, and sporting goods:** electric trains or racing car sets, video games, and sports equipment with electric elements.
- **Medical devices:** radiotherapy equipment, cardiology, dialysis, pulmonary ventilators, nuclear medicines, and analysers.
- **Monitoring and control instruments:** smoke detectors, heating regulators, and thermostats.
- **Automatic dispensers:** for hot drinks, hot or cold bottles, solid products, money, and all appliances that automatically deliver various products.

6. CONCLUSION

E-waste is an emerging issue, driven by the rapidly increasing quantities of complex end-of-life electronic equipment. The global level of production, consumption, recycling induces large flows of both toxic and valuable substances. The international regulations mainly developed under the Basel Convention, focusing on a global ban for Tran's boundary movements of e-waste, seem to face difficulties in being implemented effectively; however, a conclusive account of the situation and trends is not yet possible. On a global scale, some attempts have been made to identify past, present and future e-waste streams. The focus has been laid on quantities and in some cases on routes and spatial distribution, but a global perspective is still lacking.

7. REFERENCES

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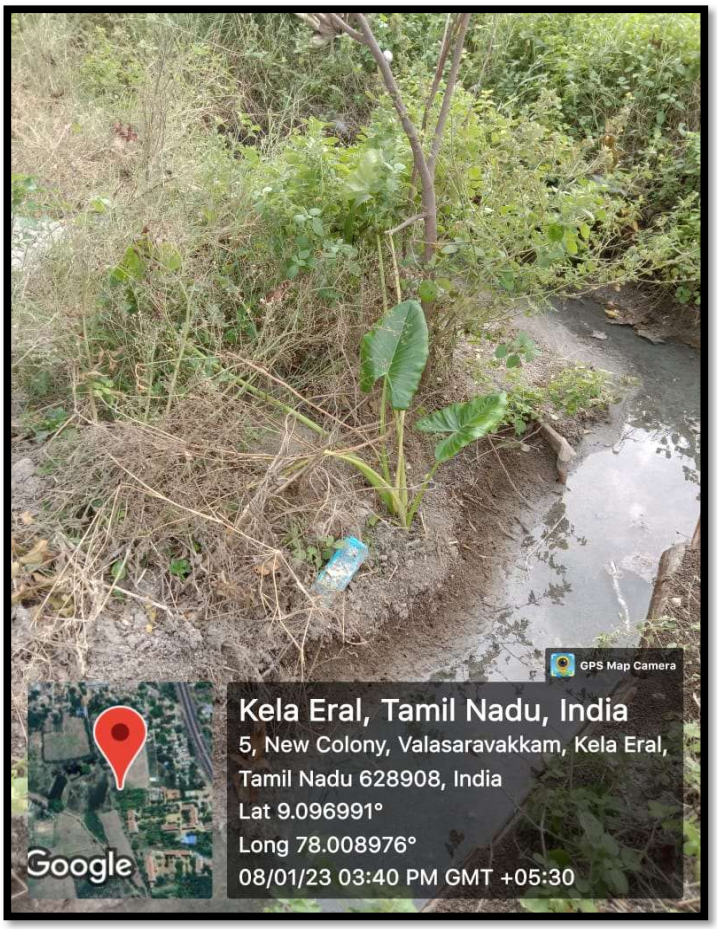
Waste Water Management:

Our college implements a comprehensive waste water management system that includes efficient water usage, proper sewage treatment, and recycling practices to minimise environmental impact and promote sustainable water consumption.



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Declaration

I hereby declare that the details and information given above are complete and true to the best of my knowledge and conviction.

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