# Gadget Waste (G-Waste)

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***Abstract:*** **Gadget waste is also known as "G-Waste". Here the keyword "waste" refers to something that is of no use.Here we concentrate mainly on the gadget Wastage. It means gadget is considered as unwanted or useless thing.Gadget waste is the one that covers all the types of electrical and electronic equipment (EEE) that have been ignored or that have been discarded. Here we made an attempt to evaluate the present situation of G-waste management that is in world as well as in India. This paper gives information about the hazards of G-wastes, about managing it and also about how it can be implemented.**

**Keyword: waste, reuse, management, hazards, implementation.**

## I. INTRODUCTION

This paper gives information about the hazards of G-waste, about managing it and also about how it can be how it can be implemented "Gadget waste" or "G-waste" can be defined as discarded electronic gadgets or some part of it.Through we use more electronic items lavish of gadget are also increases. Woefully some compounds that used in electronic items are toxic in nature because it contains many harmful flames when we burn those electronic items. As we know these gadgets are harmful and toxic. To overcome this gadgets are handled and recycled in few countries like India and China.

Here this lavish of gadget may be explained as refused mobiles, TV's, washing machines, keyboards, monitors, CPU's, Mouse etc. even they contain re-usable equipment inside. This gadget lavish harms human health even it affects on the environment. There are few, who collect all the materials (gadgets) which can be recycled and separate all the gadgets and try to recycle.

Figure 1:Gadget Waste

## II. ENVIRONMENTAL IMPACT

One major thing for the cause of environmental impact is that the reconstructing the gadget waste and disposal of the gadget waste in the countries which are developing. Environment that is the water, ground water, soil and air is contaminated by the gadget waste which are released to the

atmosphere directly and therefore it affects the animals in water as well as land and also the water will be unfit for drinking while affects the human as well.

*Causes or Major Threats:*

These days' gadget or electronic items look like disposable items every day. Even the disposal of these items is increasing rapidly each and every day. This is due to the companies which are marketing new things often. Some electronic components have harmful frames which affects on human health as well as on environment . Recycling of these gadgets are too risk for workers and also extra care must be taken while disposing or recycling any harmful components.

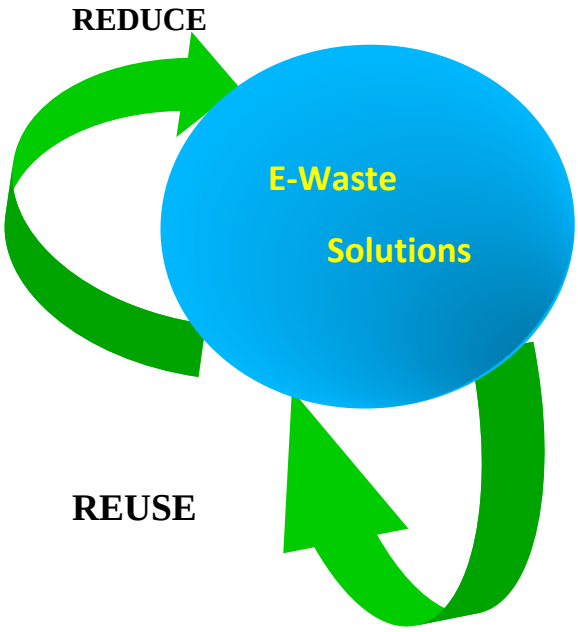
Figure 2: Gadgets Kept for Burning.

Avoidance and Reduction Methods

A major or an important method of waste management is that creation of preventing of waste material also known as the reduction of materials. Another method includes the reuse of waste. Products, repairing them instead of buying a new product, and designing the products which can be refillable and reusable which prevents the buying of another same kind of new products. Encouraging the consumers to limit or to avoid the usage of the disposable products like the removing and food items which remains through cans and packaging and also can be avoided by designing the products which makes use of less products.

## IV. RECYCLING.

The toughest challenge is to recycle the circuit boards from the electronic waste. The circuit boards contain very valuable or very precious elements like the gold, silver platinum and etc. With the base metals like aluminium, copper and iron. There is one way where this G-Waste can be processed that is by melting these circuit boards and by burning the cable sheathing. Other method can be employed like the conventional methods that is the mechanical shredding and alternative approach that is the cryogenic decomposition for the recycling of PCB's. Proper disposing leads to prevention of health disorders.




**There are Many Ways to Recycle G-Waste:**

1. Buy less-it is very essential for us to stop and ask ourselves either we want a gadget item or electronic device before we are buying it.

2. Organize -that you are buying a thing that you really wanted and what you have thought to buy. Only to find a duplicate item which will replace our buried item?

3. Donate your G-Waste if it is not required; give it away as soon as possible so that others can use it.

4. Take them back to the store-if you are purchasing something new then make sure whether the shop owner will purchase it.

5. Sell-you can also sell th em to the one who need that.

6. Learn about your local recycling-no matter where you live tr y to recycle it.

7. Think ahead-somehow we have to dispose them now or later, so why not we make money from it, rather than getting rid of them.

8. Call your local collec tion centre to begin a recycling pick u p service.

Figure 3: Collection of Similar Gadgets.

Computer will be packed into the very low stacks on the pallets of wooden for recycling and later they will be shrinking a nd wrapped.

Figure 4: Recycling the ke yboards.

**Simple Flow Diagram of Recycling Process and Pseudo C ode:**

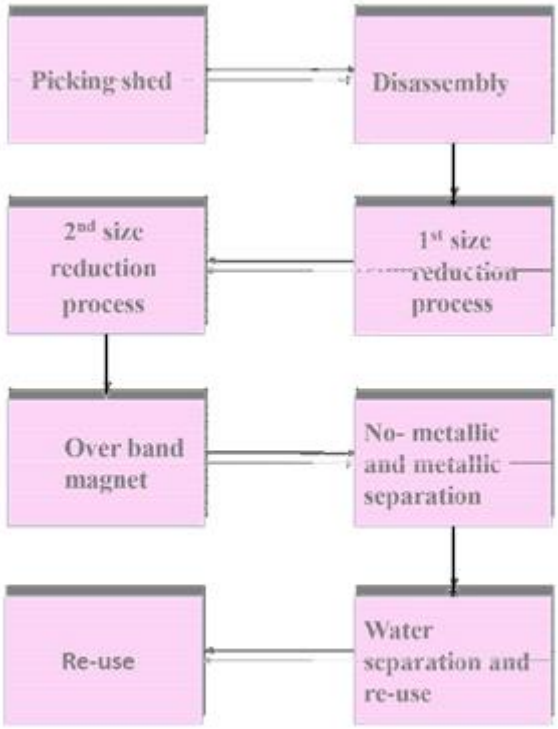



Figure 6: Block Diag ram of Recycle.

**Pseudo Code:**

1. Picking the shed
2. Store all the waste d electronic gadgets into the shed.
3. Then first size reduction process and second size reduc tion process.
4. Remove all the m agnetic materials.
5. Check whether th e items are metallic or non-metallic in nature.
6. If it is metallic.

Then these metals will be sold as the raw materials or it will be reused by the new manufacturers.

Else

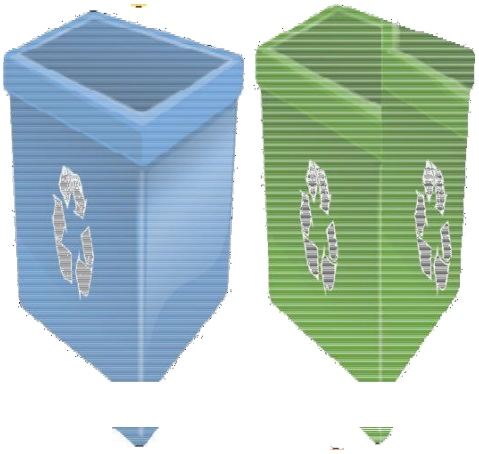
Copper, aluminium and brass are separated from the debris to only leave behind non-metallicmat erials.

7. Then sending the wante d materials for re-use.

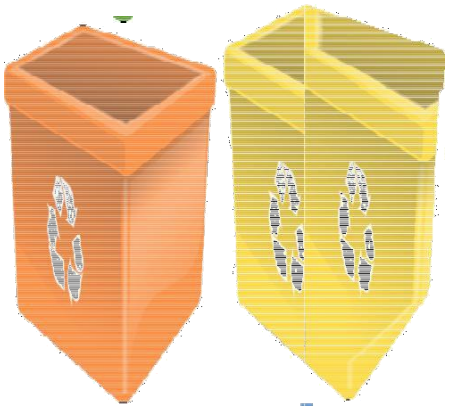
## V. G-WasteDispo sal

This word applies to consum er to business electronic equipment that is close to getting expired. G-Waste can contain heavy metals like lead that can con taminate the environment. And we don't find any particular definition for Gadget waste. These things can contain the heavy materials like lead, copper and chromium which will affect the environment.

Any lab materials which contains the elements which will cont aminates the environment should be cleared t hrough EH&S and also by the departmental office before disposing



1. PAPER 2. GLASS



3. METAL 4. PLASTIC

**Figure 7:Separating D ifferent Gadgets**

## VI.G-waste Gra phs

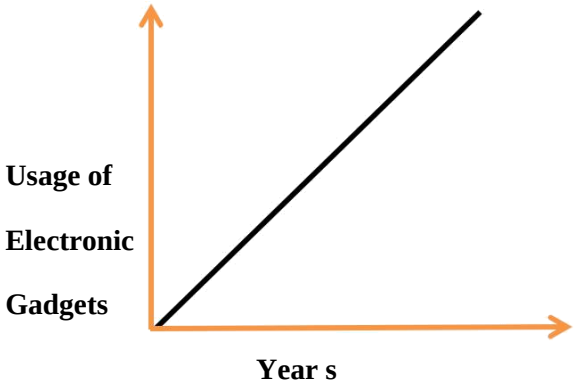



**Figure 8: Increase in the Usage of Gadgets**

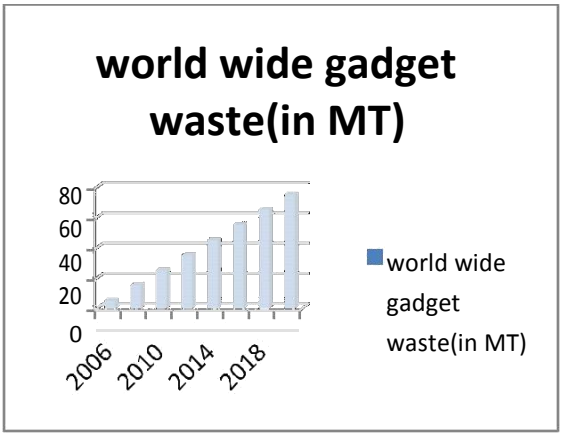



**Figure 9: World-Wide Gadget Waste in**

**Metric Million tonnes.**

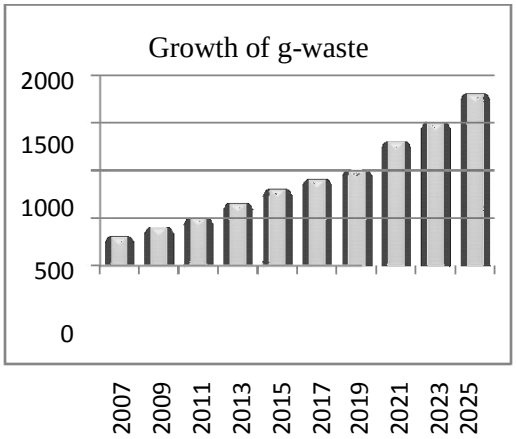



**Figure 10:Growth of Gadg et Waste.**

Here MT is metric tonnes where 1MT=1000kg

## VII. Processing Tech niques

In many developed countries, Gadget waste processing usually involves the removing the equipment into the various units. The advantage is human ability to recognize, it saves workingand repairable parts, including chips, transistors, RAM, etc.Th e disadvantage is that the labour is cheapest in countries with the lowest health and safety standards.

In an alternativebulk system, a hopper which provides materials for the shredding purpose into a mechanical se parator that is not sophisticated and also it contains the screening and granulation m achines.Such recycling machines are clos ed and they include a dust collection system. Some of the emissions are caught by scrubbers and screens. Magnets, eddy currents, and Trammel screens are employed to s eparate glass, plastic,and ferrous and nonfe rrous metals, which can be further separated at a smelter.

There is an alternative approach to the recycling that is the RE USE because it will increase the life span of the devices.

## VIII. Safety Measurements

Potential security threat to each and every individual and exportin g countries is presented by G-Waste. If the hard drivesare not erased pr operly before the

disposal of computer sens itive information can exposed. Credit card numbers, financial data's that are private an d also individual people will be able to acc ess the transactions through online.

## IX. Conclusion

Now, by looking into the a bove things the question arises is how to prevent the G-Waste? Even though Gad get waste is growing rapidly due to product inn ovation, digitalization, replacement and technology growth. Recycling and reu sing of G-Waste is costly. Therefore, before thinking about the management of G-Waste we should prevent the G-Waste.

When you buy an electro nic product, you should be sure about, that particular product meets your requirement a nd specifications that you are looking for. A nd, that particular electronic device should b e adoptable to the changing environment. Th rough the better maintain of electronic dev ices and through the smartest procurement you can reduce the G-Waste.

It can also be provided by buying products of lesser toxicity,higher efficiency and which can be recycled as well. It is b etter to buy the product from companies t hat support the recycling.

Therefore, you can conclude that safer and greener earth will be raised through the prevention of G-WASTE.

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