

## ENERGY FROM E-WASTE

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### ABSTRACT

In the recent times, we have seen the increasing pollution and very harmful causes due to e waste energy. This has led to the increase in various types of smell or and very harmful chemicals which pollute atmosphere. So we have proposed to make a research paper or project on the topic energy from e waste to motivate people to stop harmful energy from e waste. Firstly we will go through the paper planning a useful process to use the product energy expended based on energy efficiency and minimization of process of making e waste after this we will go to various models and project available on this title to collect ideas , views and process for making the project. We have to firstly identify the life of product for reuse the product .Then we will write the literature review of various research paper on the topic in the chapter 2 of the report. In chapter 3, we will think and write about various advantages and disadvantage for e waste .In this chapter we will finalize our report on energy from e waste. The proposed e waste recovery method is very important for industry. It product designer, manufacturers work for a better environmental decision making for resource efficiency.

### I. INTRODUCTION

Our country is growing really fast in multidirectional way. If we talk about urban development, we can definitely say that it is the future. But there are some obstacles in this whole development stream like population settlement, land acquisition, and yes garbage monitoring and management and many more. E waste stand for electrical and electronic equipment that is undesirable by the processor into any waste collection system. According to UNEP 20 to 50 million tons of e waste has been generated every year and increase year by year. The amount is estimated to be double in next decade. Moreover generation of e waste is growing 3 times faster than any other type of municipal waste on global level. The rapid growth of e waste in last few decades is mainly because of large handed growth in electronic and electrical industries and fast advancement of technologies. The quick growing development affects consumption habits.Life cycle of product gets shorter and resulting in escape e waste .This has resulted in replacing EEE products which still have a long life span . Furthermore majority of the e waste are ended up in landfill .It has now become one of the fastest growing waste compounds in municipal solid waste stream and it could be a source of hazardous waste that adding to the environmental burden and human health risk.To make things worse we are extracting 50% more resources than our planet can replenish today. E waste covers from large and small household appliances IT and telecommunications equipment consumer and electronic tools, toys etc. Economic growth: In past years the digital revolution has started and it provides different types of product which are not only economical and very easy to use therefore they are occupied our house completely. They are now easier and convenient to replace other than getting them reuse or repair.



## II. APPLICATIONS

The applications of our project are:

- It reduces pollution.
- Aware people about Reduce, Reuse, Repair and Recycle.
- Using discarded electronic boards, researchers have developed a system for obtaining clean hydrogen that can be used as fuel.

## III. ADVANTAGES

- It protects the environment. Recycling e-waste can make a distance of harmful materials out of the environment.
- It reduces business costs.
- It supports non-renewable recycling.
- It shows your eco-friendly credentials.
- It's super easy to recycle e-waste.

## IV. DISADVANTAGES

- High upfront capital costs.
- Products from recycled waste may not be durable.
- Recycling might not be inexpensive.
- Recycling is not widespread on large scale.
- More energy consumption and pollution.
- Result in pollutants.

## V. LITERATURE REVIEW

SNO	YEAR	CASER STUDY
1	2003	Kuehr and Williams stated that an increasing market for reused PCs in developing countries is allowing people to own PCs and access technology at more affordable prices
2	2008	Ramzy Kahhat, stated in his article that some states are adopting e-waste regulations, but so far the U.S. does not have a federal regulation that addresses the complete e waste situation
3	2011	. In a report, "Ghana E-Waste Country Assessment", found that 215,000 tons of electronics waste imporedeted to Ghana . Of the used product, the study concluded that 15% was not reused and was scrapped or discarded.
4	2012	In a study by Jalal Uddin , Through innovative changes in product style below EXTENDED PRODUCER RESPONSIBILITY (ERP), use of environmentally friendly substitutes for dangerous substances
5	2013	Sivakumaran Sivaraman confirmed that the public awareness and cooperation of manufactures are essential for the advancement of e-waste management system
6	2014	According to Vijay N. Bhoi , most of the waste is inherently dangerous
7	2015	Yamini Gupt & Samraj Sahay suggested that financial responsibility of the producers and separate collecting and recycling agencies contribute significantly to the success of the extended producer responsibility-based environmental policies

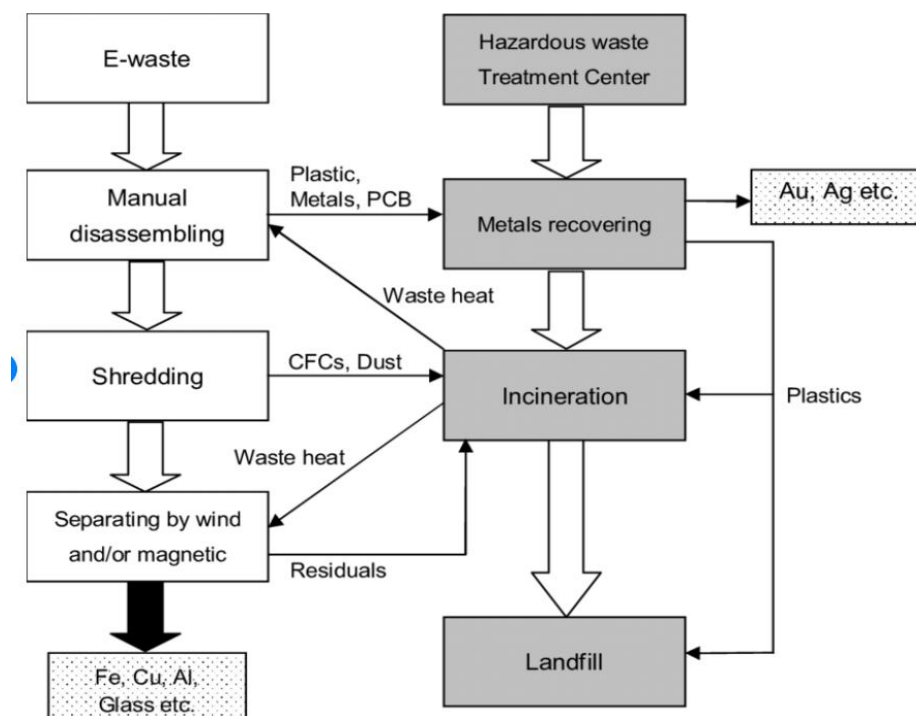
## VI. METHODOLOGY

### Stage 1:

The first stage of E Waste recycling is sorting and segregating the waste into different categories such as CRT televisions flat screen televisions printer's computer peripherals computers and out of scope product after the sorting and segregation.

### Stage 2:

Waste is weighed on our industrial scales and then sent for pre sorting in the pre sorting stage we remove physical hazards such as batteries ink and tons cartridges lamps containing mercury and CRT glass to name a few we also fully dissembled CRT televisions of CRT televisions contain live glass which can be hazardous if shredded the CRTs are passed into our CRT separation container where we can recover leaded glass from non leaded material is ready to enter our primary shredder during this process material will be shredded into large pieces which can be picked off easily but staff on our packing line material the leaves the primary shredder and passes under an over band magnet collects materials such as steel and ferrous items and passes it on to a picking line on the picking line staff pick off contamination things that are not quite fully separated so that we have a very clean steel product coming off the that line the material is picked off and passes until it separates properly the remaining material then passes into the secondary shredder and hammer mill where it is further reduced in size and liberated from one another any piece of aluminium still stuck to plastic will be separated in this stage .



**Fig-1.** Block Diagram

## VII. PROBLEM DEFINITION

As you all know e waste problem is being increasing and scanning alarming attention because of environmental effects associate with it. According to World Bank report of 2012 says the waste or E-waste generation around 1.3 billion and it is expected to increase to up to 2.2 billion by 2025. Now there are both developing and developed country are facing problem of E - waste management as we told u earlier E waste is gaining importance because there is lack of awareness among the public. About is health and environmental effects now though it has valuable materials in it also is associated with a lot of environmental effects. Normally these low income groups people the ragpickers they use these electronic waste. They dis meatal it thinking using it as a source of income because the available of these valuable materials. The way of dismantling this electronic

waste is not proper this research a lot of toxic effects on workers associated with dismantling this electronic associate waste hence it is essential for us to have proper management practice the other 40% was recycled and 25% of that, was then shipped to developing nation. Electronic waste or E-waste is now the nearest growing source of toxic waste in the world.

### VIII. RESULT

In 2019, 98 million metric tons of Co<sub>2</sub> equivalents released Emissions came from discarded fridges, air conditioners. As for the policy concerned the E Waste handling that's the EPR extended producer responsibility which has been given or the implemented by the pollution control board has made that producer , Producer of electronic and electrical waste or electrical product responsible for carrying out their waste from like supply chain management from the customer to the recycler the formal . Industries right initially that they were not responsible they are just selling it out and customer has to take care of their E Waste which they were not aware so now the policy is there in that in place where customer or the end customer or the bulk consumer like corporate maybe any big name which they are using laptops computers monitors and everything. The consumers also they are responsible to channelize their electronic waste till the recycler so that it can get properly recycled and it should not harm to the environment so the policy is there and everybody is working on that part and many of the producers are responsible for their awareness. PCB one rule is the EPR in the sub rule of TPR is the awareness for the awareness also the producer are responsible to make the aware of all the institutes may be webinar . E Waste Recyclers under EWM rules must abide by the CPCB's provision relating to the recycling processes.

### IX. CONCLUSION

Lastly we conclude that the problem of e waste can be solved using **3-R** mantra or rule. The rule is reducing, re-use, and recycle. Reduce mean to reducing the devices or e-waste into a useful things. Re-use mean to reusing possible e-productions.

- Reduce your e waste by keeping your devices in good condition.
- Reuse the functioning electronic devices by selling it.
- Recycle the electronic devices that cannot be repaired.

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