



## ORIGINAL ARTICLE

**A Study on Garbage as Recyclable Energy Device****Mitra Pal Singh**

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Email: [mpyzology@gmail.com](mailto:mpyzology@gmail.com)Received: 31<sup>st</sup> July 2018, Revised: 20<sup>th</sup> August 2018, Accepted: 4<sup>th</sup> September 2018**ABSTRACT**

Wastes are the residues of those products which are used by anybody for their personal or others welfare or for commercial purposes, Throughout most of history, the waste generated by humans was insignificant due to low population density and low societal levels of the exploitation of natural resources. During pre-modern times, the common waste products were mainly ashes and human biodegradable wastes. These wastes of pre-modern time were released back in to the ground locally. As the population is increasing day by day so in the same ratio sanitary conditions also going on poor level. During pre-modern time tools were made up of mostly wood and metals. They were reused generally and passed out through the generations. Today the waste is produced in a large quantity. It can take any form like solid, liquid or gas and each have a separate method of disposal and management. The proper disposal of wastes from its inception is called waste management or waste disposal. Due to increased population density the spaces for dumping the wastes became narrow. Now this is our main moto that we can make the best use of wastes by converting it into energy and others useable items. Due to this the waste will be used in proper byproducts' and our natural resources will also not suffer by human activities directly. Wastes are of different types like liquid waste, solid waste, organic waste, recyclable rubbish Industrial wastes and hazardous wastes. The liquid waste is recognized in household and in the industries. The solid rubbish include a chain of items which is found in household along with industrial and commercial location while organic waste are common household. Man is the chief agent in producing waste enormously. Managing of the waste is a chief demand as they spreading their bad effect where dumped or collected for further process. Government also making efforts towards it. We also together cooperate the related body for waste disposal or waste management because no one alone can do anything. A famous social reformer Edwin Chadwick worked a lot of upon sanitary condition of London.

**Key words:** Garbage, Recycling, Energy

**INTRODUCTION**

In India as well as in the whole world garbage is being produced enormously. We can see the piles of garbage every where at the corners of crossings or nearby the town, cities and villages etc. A large quantity of garbage is produced by different devices per day. To manage the wastes is called as waste management. Actually it is the collection, disposal, treatment and transportation of garbage. Sewage and other useless products are called as waste. All the activities and actions which are compulsory to manage the waste from its inception to its final disposal are come under the waste management. It also encompasses the legal and regulatory framework that relates to waste management encompassing guidance or recycling. These are solid, liquid or in gas form. Each waste has a separate method for its disposal.

It deals with all types of waste whether it was created in the forms that are industrial, biological, household and special cases where it may pose a threat to human health. Waste is produced due to human activities. Even in the kitchen waste is also produced. Waste management practices are according to country-wide as developing and developed, urban and rural and residential or industrial but a large portion of waste management practices deals with municipal solid waste (MSW).

**TYPES OF WASTES**

Wastes have been producing for a long time or in other words we can say that from the origin of the earth. Also in ancient times wastes were created but slowly they changed their shape and form. Presently the population was growing rapidly. This is the root problem of any undesirable device on the earth. Population density is increasing day by day causing an adverse effect upon the environment. Common waste produced during pre-modern times was mainly ashes and human biodegradable waste, and these were released back in to the ground locally with minimums environmental impact. Earlier the waste was not so injurious like today. Farming was simple but

presently as the man getting more knowledge in every field, our environment getting more injurious and many types of wastes. The use of different agricultural, electronic and scientific devices on commercial scale was producing more and more wastes, also hazardous. These are from different types of industries. The wastes are in the form of liquid, solid and gas. To obtain pure and fresh environment, their disposal is compulsory.

## **METHODS OF WASTE MANAGEMENT**

Although waste management borne since the production of wastes took place on the earth; in earlier it was low level due to low population density. At present it a world wide problem Edwin Chadwick was a social reformer in 1842 argued for the importance of adequate waste removal and management facilities to improve the health and wellbeing of city's population.

According to the Associated Chambers of Commerce and Industry (ASSOCHAM) predictions, 'India will generate 130 million tones of e-waste by 2018, India is respected to generate 260 million tones of e-waste. Waste management is the process of treating solid wastes and offers variety of solutions for recycling items that do not belong to tarsh. It is about how garbage can be used as a valuable resource. It is something that each and every household and business owner in the world needs. Waste management disposes of the products and substances that you have use in safe and efficient manner In other words waste management or waste disposal is all the activities and actions required to manage waste from its inception to its final disposal.

There are many methods of waste disposal or waste management. Among them some are as under-

### **1. COMBUSTION:**

It is also called as incineration waste disposal method. In this type municipal solid wastes (MSW) are burned at high temperature. After this the solid wastes convert themselves into gaseous products and residues. Due to this the original volume of the solid waste reduces up to 20-30%. This process is followed in those countries where land fill spaces are no longer. This type of method for waste disposal is also called as thermal treatment of the solid waste.

### **2. PLASMA GASIFICATION:**

It is type of waste disposal method; we obtained renewable energy which is a characteristic feature of this method. During this process solid waste's molecular bonds are broken down as result of the intense heat in the vessels and the elemental components. Actually plasma is a primary on electrically charged gas. By lighting to plasma it produces temperature up to 12, 600°F. Due to this a gasification zone is formed and solid or liquid waste charged in the syngas.

### **3. COMPOSTING:**

It is a common method for waste disposal and normally used for organic farming. In this method waste disposal, the organic material is allowed to sit at one place for few months until microbes decompose it. It is one of the best methods of waste disposal in which the unsafe organic products turned into safe compost. It provides nutrient rich food for agriculture. Remains of plants, gardens and kitchen wastes come under the category of organic wastes.

### **4. WASTE MINIMIZATION:**

In this the less creation of waste material is main aim. Due to this the reduction of quantity of waste going to landfill takes place. The reduction of waste can be done through recycling of old materials like jars and repairing of broken items instead of buying new one. Avoidance of disposable products like plastic bags and reusing of second hand items etc. we have to focus upon the less production of waste items.

### **5. RECOVER ENERGY:**

It is also called as waste to energy method. In this method non-recyclable waste item convert into heat, electricity or fuel through a variety of processes. It can also help to reduce carbon emissions by offsetting the need for energy from fossil sources.

### **6. LANDFILLS:**

In modern days, it is the most popularly used method of waste disposal. In this the garbage is thrown daily in the landfills for disposal. The main focus of this method is for waste disposal is to

attention on burying the waste in the land. These methods are followed mostly in the developing countries. The demerits of this method are that landfills give rise to air and water pollution. This severely affects the environment and may be fatal to lives of humans and animals. Now a days people are less using this method, causing contamination problems.



**Fig.1:** Different Methods of Waste Management

### **IMPORTANCE OF WASTE MANAGEMENT**

As we know that the population of the planet growing rapidly day by day. Similarly the waste is also increasing in the same ratio. The recycling of the waste has been always the topic of much dispute. Recycling of rubbish is an important saving tool for the planet. In other words with the help of recycling of wastes we can conserve the natural resources for the planet for future. Recycling of wastes to energy is an important alternate for future as the natural resources are decreasing day by day due to rapid growth in population. It may be possible that the future generation will suffer by the deficiency of natural resources because these natural resources can not produce but can only save. Different natural resources like coal, water, trees, gases and petroleum products are running out. In many countries there are many sites where people bring and sell old news paper, metals items and glass. All these products are recycled and used again. Deforestation is a huge problem. Every year thousands of trees cut down. Government is not taking a tight and punishable action against these people. They are destroying the forests by earning economy. New trees are not planted in the same ratio, hence we are suffering with many problems. Paper, paper cups and cupboards are made from trees. It is possible to recycle paper products instead of cutting new trees. By the recycling of plastic energy can be gained. Many plastic industries pollute the environment by smoke through plastic manufacturing. Recycling of plastic also will produce energy and reduce the pollution.

In every large or small city of India, there are some large areas of wastes called 'Waste Is lands'. Rubbish is a main problem of sea life. A large quantity of rubbish is thrown into the sea, ocean and some rivers where sea, ocean and other creatures of river dies a lot. Proper storage safety and disposal of specific items is most important because they can become poisonous after a limited period. Many people do not have their interest for recycling rubbish as they are not interested to look after themselves, nature and humanity. Many other people don't know how to do it. Recycling begins with rubbish management. We also have to know that paper items should be thrown into dustbin of paper waste and glass into glass bin. Wet and dry rubbish also through into separate dustbins for proper and safe waste management.

### **CONTROL**

There are many ways to minimize the production of waste and for other uses. Waste to energy technology can convert waste matter into various fuels that can supply energy. Other components,

like bricks can be recycled to be used as road base and construction fill. Bricks found in debris can be recycled into bricks aggregates. Some companies have also come up with ways to recycle concrete, left behind by demolishing or renovating concrete structures. By applying best practices in waste management, companies can reduce corporate expenses. To avoid paying more for waste management than your organization should you must. Government should make act according to the production of wastes and make charges at the line item-level. Knowledge of actual market rates for waste hauling services by region and through national program offerings. A widely popular scheme was launched by the present government 'The Swachchh Bharat Abhiyan' is playing its important role in cleaning the environment regularly. Every department and many NGO's (Non Government organization) are also making efforts towards it.

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