

E-WASTE AND THE INDIAN PENAL CODES-IN INDIA

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ABSTRACT

Dumping of e-waste in public places and water resources are creating serious health hazards and unless and until it is controlled the reaction out of this world cause infection which would create a lot of disadvantage to the society. So, there should be a rule to prevent the people from damaging the ecosystem of our country to save nature to save people. The implementation of strict law for the prohibition of dumping e-waste should be sanctioned by the legal system and it should be activated by the Indian Penal Code. There are about 94 types of electronic products as re-selling illegally by recycling methods. An economic solution and implementation of law (IPC-Sections) are designed to achieve an optimal source to reuse and reduce the e-waste.

Keywords: E-pollution, Backyard recycling, Energy re-usage, Innovation, Implement –IPC

I. INTRODUCTION

The Electronic products comprise of e-wastes which have reached their end-of-life stages, like televisions, PCs, mobile phones, electrical appliances, etc. The e-waste is one of the fastest growing types of waste in the developed world in view of the growing menace of e-waste generation and large scale involvement of the unorganized sector in processing e-waste in an environmentally unsound and occupationally hazardous. In the current situation urgent technological innovation and market intervention in tackling the problem is a must. To reduce this issue we should involve interdisciplinary activities like the Indian penal code (law) otherwise the pollution caused by the e-waste would engross the whole world with severe impacts on ecological system. Irrespective activities carried out by industrial and other organization:

The industries and other organization are quiet unmindable of dumping the e-waste in public places such as on riverbanks, ponds, other places where many peoples inhabits. The rotten smell coming out of this is unbearable and obnoxious. The people living in such areas are on the edge of being affected by contagious diseases. According to hospital reports a large host of people frequents doctors to have a cure on cancer, asthma, dialysis, liver problems etc... It is reported that one lakh and 80 thousands peoples died out of liver cancer in our country. So, immediate steps are to be taken to say a colossal perdition of lives.

II. PROBLEMS WITH E – WASTE

There are no harmless substances. There are only harmless ways of using substances. Dumping of e-wastes is putting children at risk and 50 percent of all used e-waste is “dumped” into India, China and African countries, where it is a common practice for children (and some adults) to make money by “backyard recycling” scrap electronic products are fired in open places to remove reusable components. Electronic waste is the major issue in India. It affects many peoples either directly or indirectly. E-waste creates a lot of economic and environmental losses to our country.

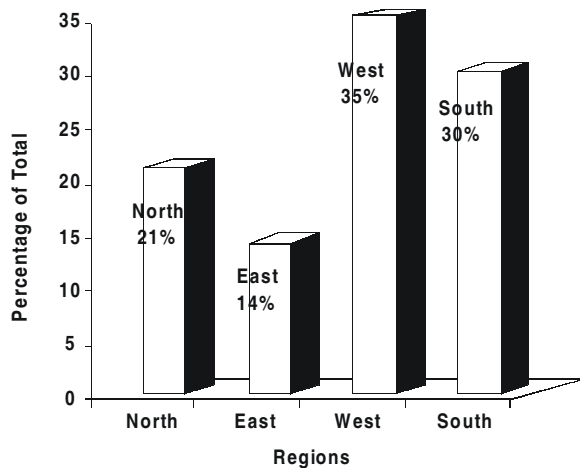
The term e-waste is applied to all waste from or caused by electronics, which is often toxic waste. It is a major concern with respect to wireless technology and computers, which are readily discarded due to rapid technological change, low initial cast and planed obsolescence. The various solutions including recycling, re-use, standardization of technologies and implementation of law for less rapid obsolesce are applied.

The development of semiconductor products has been accompanied by an increased release of potential toxic wastes, which are harmful to health and environment.

In India, 133 crore inhabitants generate 3.3lakh metric tones of e-waste per year that is 0.29kg of e-waste per person per annum-an astounding figure. A recent survey shows that e-waste amounting to 21.8kg per annum is already being produced in India. The

e-waste imbroglio in India stood at 3,000 tonnes per day in 2007 and is projected to reach 10,000 tonnes per day by 2012. In 2020 the e-waste is produced above 40000 tonnes per day, as we expect. So steps are to be taken to tackle this problem.

Graph between E-waste Generation and Four Regions



Comparison of e-waste production for recent years:

Sl.no.	Years	E-Waste(metric tonnes)
1	2007	$Y_0 = 330000$
2	2008	$Y_1 = 382000$
3	2009	$Y_2 = 434000$
4	2010	$Y_3 = 486000$

Since the values of y_1 and y_3 are unknown, Newton's shifting method formula is used to determine the values.

Formula Used

Newton's shifting Method

$$(E - 1)^2 y_k = 0 \dots\dots\dots 1$$

$$(E_2 - 2E + 1) y_k = 0 \dots\dots\dots 2$$

Put $k = 0$

Substitute the value of k in equation 2

$$(E_2 - 2E + 1) y_0 = 0$$

$$E^2 y_0 - 2E^1 y_0 + y_0 = 0$$

Apply the shifting techniques

$$Y_2 - 2 y_1 + y_0 = 0$$

$$- 2 y_1 = - (y_2 + y_0)$$

$$y_1 = \frac{y_0 + y_2}{2}$$

$$y_1 = \frac{y_0 + y_2}{2}$$

$$y_1 = \frac{330000 + 434000}{2}$$

$$y_1 = \frac{764000}{2}$$

$$y_1 = 382000 \dots\dots\dots 3$$

Put $k = 1$

$$(E^2 - 2E + 1) y_1 = 0$$

$$E^2 y_1 - 2E^1 y_1 + y_1 = 0$$

Apply the shifting techniques

$$y_3 - 2y_2 + y_1 = 0$$

$$y_3 = 2y_2 - y_1$$

$$y_3 = 2 * 434000 - 382000$$

$$= 868000 - 382000$$

$$y_3 = 486000 \dots\dots\dots 4$$

III. BIOMEDICAL WASTES

(a) Types of waste

The U.S Medical waste Tracking Act (MWTA), which was enacted by congress in response to public concerns after syringes, needles, and other medical wastes washed ashore on the U.S. east coast in 1988, defines "regulated medical wastes" as (U.S.EPA, 1989b):

Cultures and stocks of infectious agents

Human pathological wastes

Human blood and blood products

Sharp implements: used and unused

Contaminated animal wastes

Isolation waste from patients with highly communicable diseases

Generators of biomedical wastes include hospitals and, to a lesser extent, clinics, research laboratories, and drug companies. Solid waste generation by hospitals is estimated to be between 4.5 and 9.1 kg/day per bed (10 to 20 lb/day per bed), of which roughly 10% is thought to be infectious or disease causing. In addition to infectious wastes and noninfectious solid wastes, most hospitals also generate chemical and chemotherapy wastes, organic wastes (solvents), and radioactive wastes which may be regulated as "hazardous wastes" under RCRA (Except radioactive wastes which fall under the Atomic Energy Act, as noted earlier). Generation of RCRA hazardous waste was estimated in one study to be 21 mL/bed per day (0.056 lb/bed per day) which, for a 200" bed hospital, translates into 152 Kg (336 lb) per month. This quantity is significant because it would qualify a hospital as a "small-quantity generator" under RCRA, forcing those wastes to be sent off-site to an authorized facility (Cross *et al.*, 1985).

IV. THE INDIAN PENAL CODE (IPC)

The Indian penal code (IPC) strongly says..... IPC-486. Selling goods marked with a counter property mark—Whoever sells, or exposes, or has in possession for sale, any goods or things with a counterfeit property mark) affixed to or impressed upon the same or to or upon any case, package or other receptacle in which such goods are contained, shall, under he proves---

1. That having taken all reasonable precaution against committing an offence against this section, he had at the time of the commission of the alleged offence on reason to suspect the genuineness of the mark, and.
2. That on demand made by or on behalf of the prosecutor, he gave all the information in his power with respect to the person from whom he obtained such goods or things, or
3. That otherwise he had acted innocently,

Be punished with imprisonment of either description for a term which may extend to one year, with fine, or with both.

Making or possessing counterfeit seal, etc. with intent to commit forgery punishable under Sec.467 of the Indian penal code.-whoever makes or counterfeits any seal, plate or other instrument for making an impression, intending that the same shall be used for the purpose of committing any forgery which would be punishable under Sec.467 of this code, or with such intent, has in his possession any such seal, plate or other instrument, knowing the same to be counterfeit, shall be punished with³ [imprisonment for life], or with imprisonment of either description for a term which may extend to seven years, and shall also be liable to fine.

Making or possessing counterfeit seal, etc. with intent to commit forgery punishable otherwise.-whoever makes or counterfeits any seal, plate or other instrument for making an impression, intending that the same shall be used for the purpose of committing any forgery which would be punishable under any section of this chapter other than Sec. 467, or with such intent, has in his possession any such seal, plate or other instrument, knowing the same to be counterfeit, shall be punished with imprisonment of either description for a term which may extend to seven years, and shall also be liable to fine.

Counterfeiting device or mark used for authenticating documents prescribed in Sec.467 or possessing counterfeit marked material.-whoever counterfeits upon, or in the substance of any material any device or mark used for the purpose of authenticating any document described in Sec.467 of this code, intending that such device or mark shall be used for the purpose of giving the appearance of authenticity to any document then forged or thereafter to be forged on such material, or who, with such intent, has in his possession any material upon or in the substance of which any such device or mark has been counterfeited, shall be punished with¹ [imprisonment for life], or with imprisonment of either description for a term which may extend to seven years, and shall also be liable to fine.

Counterfeiting device or mark used for authenticating documents other than those described in Sec.467, or possessing counterfeit marked material. Whoever counterfeits upon, or in the substance of, any

material, any device or mark used for the purpose of authenticating 1 [any document or electronic record] other than the documents described in Sec.467 of this code, intending that such device or mark shall be used for the purpose of giving the appearance of authenticity to 1 [any document or electronic record] then forged or thereafter to be forged on such material, or who, with such intent, has in his possession any material upon or in the substance of which any such device or mark has been counterfeited, shall be punished with imprisonment of either description for a term which may extend to seven years, and shall also be liable to fine.

Fraudulent cancellation, destruction etc. of will, authority to adopt, or valuable security.-whoever fraudulently or dishonestly, or with intent to cause damage or injury to the public or to any person, conceals, destroys or defaces, or attempts to conceal, destroy or deface, or secretes or attempts to secrete any document which is or purports to be a will, or an authority to adopt a son, or any valuable security, or commits mischief in respect to such document, shall be punished with. 2 [imprisonment for life], or with imprisonment of either description for a term which may extend to seven years, and shall also be liable to fine.

Erasure of mark denoting that stamp has been used. Whoever, fraudulently or with intent to cause loss to Government, erases or removes from a stamp issued by Government for the purpose of revenue, any mark put or impressed upon such stamp for the purpose of denoting that the same has been used, or knowingly has in his possession or sells or disposes of any such stamp from which such mark has been erased or removed, or sells or disposes of any such stamp which he knows to have been used, shall be punished with imprisonment of either description for a term which may extend to three years, or with fine, or with both.

Fraudulent use of false instrument for weighing. - whoever fraudulently uses any instrument for weighing which he knows to be false, shall be punished with imprisonment of either description for a term which may extend to one year, or with fine, or with both.

Negligent act likely to spread infection of disease dangerous to life. - Whoever unlawfully or negligently does any act which is, and which he knows or has reason to believe to be, likely to spread the infection of any disease dangerous to life, shall be punished with

imprisonment of either description for a term which may extend to six months, or with fine, or with both.

Making or selling instrument for counterfeiting government stamp. Whoever makes or performs any part of the process of making, or buys or sells, or disposes of, any instrument for the purpose of being used, or knowing or having reason to believe that it is intended to be used, for the purpose of counterfeiting any stamp issued by government for the purpose of revenue, shall be punished with imprisonment of either description for a term which may extend to seven years and shall also be liable to fine.

IPC270—Malignant act likely to spread infection of disease dangerous to life:- Whoever Malignant does any act which is, and which he knows or has reason to believe to be, likely to spread the infection of any disease dangerous to life, shall be punished with imprisonment of either description for a term which may extend to two year, or with fine, or with both.

Hazardous waste:

Hazardous waste is any discarded solid or liquid material that is toxic, ignitable, corrosive, or reactive enough to explode or release toxic fumes.

According to the UN Environment Programme, developed countries produce 80-90% of these wastes.

The US centers for Disease control and prevention (CDC) estimates that at least 400000US children still have unsafe blood levels of lead caused by exposure from the number of sources.

National academy of science and numerous other studies indicate “there is no safe level of lead in children’s blood”.

Lead is especially harmful to children and is still used in leaded gasoline and household paint in about 100 countries.

E-Waste Law in India:

Recently, Greenpeace examined the policy-and-practice on e-waste take-back offered by 20 e-brands in India and found that only one global brand (Acer) and two Indian brands (HCL and Wipro) have functioning take back services in India Moving a step further, Wipro walks into the path e-waste law in India.

According to Greenpeace, the demand by IT and consumer electronic brands for a comprehensive law

embracing IPR in India to tackle impending e-waste crisis is getting louder as brands have started openly pitching for this. Acer is the only global brand that openly speaks about the necessity of such a law in India.

"We welcome and appreciate Wipro's pro-law move with this the brand has joined the league that includes HCL and Acer," commented Abhishek Pratap, Toxics Campaigner, Greenpeace

"Now the brand needs to lobby with in the electronics sector and with the government to make the law a reality".

On chemical management of products, Wipro has moved further with a stronger 'Precautionary Principle' and chemical management policy.

This is reflected in its aggressive time line of 2010(2012) for complete phase out of phthalates, beryllium and antimony, along with phase –out time line set for BFR and PVC as 2009.

These three brands have ensured effective take-back service for their respective branded, end-of-life products in India. Greenpeace demands that other electronic brands should follow the path taken by Wipro and publicly announce support for e-waste law in India.

Legislation embracing producer Responsibility for e-waste is already in force in the EU, Japan, Korea, Taiwan, and in a few of the states in the US.

According to NASA's report the world temperature in the year 1899 was 13.88 degree Celsius and in 1999 it was 14.45 degree Celsius. The difference is 0.57 within the period of past 100 years. It is predicted that the next 100 year the world temp. would be raised from 1.4 to 5.8, we expect.

Making or possessing of any instrument for counterfeiting a trade-mark or property mark.-whoever makes or has in his possession any die, plate or other instrument for the purpose of counterfeiting a property mark, or has in his possession a property mark for the purpose of denoting that any goods belong to a person to whom they do not belong, shall be punished with imprisonment of either description for a term which may extend to three years, or with fine, or with both.

Making a false mark upon any receptacle containing goods.- whoever makes any false mark upon any case. Package or other receptacle containing goods, in a manner reasonably calculated to cause any public servant or any other person to believe that such receptacle contains goods which it does not contain or that it does not contain goods which it does contain, or that the goods contained in such receptacle are of a nature or quality different from the real nature or quality thereof shall, unless he proves that he acted without intent to defraud, be punished with imprisonment of either description for a term which may extend to three years, or with fine, or with both.

Punishment for marking use of any such false mark, whoever makes use of any such false mark in any manner prohibited by the last foregoing section shall, unless he proves that he acted without intent to defraud, be punished as if he had committed an offence against that section.

Tampering with property-mark with intent to cause injury.-whoever removes, destroys, defaces or adds to any property-mark, intending or knowing it to be likely that he may thereby cause injury to any person, shall be punished with imprisonment of either description for a term which, may extend to one year, or with fine, or with both.

Feeding bottle made out of plastics known as Bisphenol-A is dangerous to the health of a baby, it causes chest cancer and hormone imbalances. This bottle is declared illegal in Canada Australia, France and Britain, in India IPC270—Malignant act likely to spread infection of disease dangerous to life:- Whoever Malignant does any act which is, and which he knows or has reason to believe to be, likely to spread the infection of any disease dangerous to life, shall be punished with imprisonment of either description for a term which may extend to two year, or with fine, or with both.

At present there are no recycle units in our country. So if more recycle units is being developed, then it will ensure a lot of job opportunity to lakhs and lakhs of peoples in rural areas despite of its pollution? It supports control of pollution and also increases economic status.

So it is much important that the government must take necessary steps to make the use of these

recycling plants as early as possible, because private sectors are concerned with self beneficial activity and not taking care of our people.

If the government of India shows interest in establishing a recycling plant, more than four lacs people from rural area will be benefited

V. CONCLUSION

E-waste recycling is the process of converting these wastes into usable things which is good for the economy due to five main reasons.

They are as follows...

Safe disposal of electrical and electronic wastes can be done. Materials like precious metals, plastics etc., can be recovered and also can be reused. More employment opportunities can be made separately for this process. Environmental and commonly all other pollutions can be controlled to a considerable amount because of this process. Economical down flow can also be controlled by using this recycling process. The various solutions including recycling, re-use, standardization of technologies and implementation of law for less rapid obsolesce are applied. Following the four R's resource use to control the e-waste: Refuse, Reduce, Reuse, and Recycle.

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