

The Exigency of a Legal Framework on E –waste management in India

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A journey from hardship to comfort obliged the human beings for more new inventions. A life without electronic device could not find any place even in our dreams. After discarding these as waste, the disposal becomes a real menace to be met with. India being the second largest mobile market is not far behind in place for e waste production too. The wastes are substances or objects, which are disposed of or are intended to be disposed of, or are required to be disposed of by the provisions of national laws. E-waste is categorized as hazardous waste due to the presence of toxic materials according to the Basel convention. The e-waste poses as a serious threat not only to human beings but also to environment. Sometime inter country disposal is done and it creates some muddle between them. There have been numerous conventions held for the management of e- waste. India being a signatory to this convention has also taken some legislative measures for the proper management of the e waste. This paper discusses what is E-waste, the challenges in disposal of e- waste, the e waste disposal in developed as well as various developing countries. The Indian legal framework for the management of e waste and checks the exigency of an act in this area.

Introduction

The technology and communication revolution in India in the 20th century is on an impressive rate and there is a rapid growth. India is at a crossroads with tremendous growth in the electronics industry but it also faces the exponential growth of electronic waste (e-waste). Faster obsolescence and subsequent up-gradation of electronics product, are forcing consumers to discard old products, which in turn accumulate huge e-waste to the solid waste stream. India being a developing country handles e- waste from developed countries and from internal consumers. Currently, an estimated 70 percent of e-waste handled in India is from other nations, but the UNEP[1] estimates that between 2007 and 2020, domestic television e-waste will double, computer e-waste will increase five times, and cell phones 18 times. This paper analyses the challenges in framing an act in e -waste management and why there is an exigency in such field.

What is e-waste?

E--waste or 'electronic waste' refers to equipment or products having a battery or an electrical cord, which have become obsolete, either due to advancement in technology, changes in fashion, style and status, or are nearing the end of their useful life. E-waste generally consists of obsolete electronic devices such as computers, servers, mainframes, monitors, TVs and display devices, telecommunication devices such as cellular phones, calculators, audio and video devices, printers, scanners, copiers and fax machines, besides

refrigerators, air-conditioners, washing machines, microwave ovens and toys. Such wastes are generated by manufacturers, distributors, retailers, consumers, re-users and recyclers and can subsequently arise also from individual households, Government, public and private sectors, importers and secondary markets for old PCs, cell-phones etc. E-waste contains hazardous substances that, if treated inappropriately at end-of-life, can damage human health and the environment. It also contains complex valuable materials, such as precious metals which need to be treated properly to effectively recover them with minimal environmental impact. itself is self. A key part of the definition is the word “waste” and what it logically implies – that the item has no further use and is rejected as useless or excess to the owner in its current condition. It is important to note that the definition includes all types of EEE, as there is no room for regional variance or preference in a global definition; the fact that the item in question meets the definition “with circuitry or electrical components with power or battery supply” qualifies it for inclusion[2]. The inclusion of “parts” within the definition refers to parts that have been removed from EEE by disassembly and are electrical or electronic in nature. The use of the term “discarded” is also central to this definition, meaning to throw away or get rid of as useless . The term implies that the item in question is considered excess or waste by the owner. It is the critical point at which the potential nature of the item changes from a useful product to that of waste. In India, E-waste is covered in Schedule 3 of “The Hazardous Wastes (Management and Handling) Rules, 2003”. Under Schedule 3, E-waste is defined as “Waste Electrical and Electronic Equipment including all components, sub-assemblies and their fractions except batteries falling under these rules”. “Guidelines for Environmentally Sound Management of E-waste” formulated by the Ministry of Environment and Forest, Government of India, in the year 2008 followed the same definition

Challenges in e waste management

Land filling

The environmental risks from land filling of E-waste cannot be neglected because the conditions in a landfill site are different from a native soil, particularly concerning the leaching behavior of metals. In addition it is known that cadmium and mercury are emitted in diffuse form or via the landfill gas combustion plant. Although the risks cannot be quantified and traced back to E-waste, land filling does not appear to be an environmentally sound treatment method for substances, which are volatile and not biologically degradable As a consequence of the complex material mixture in E-waste, it is not possible to exclude environmental (long-term) risks even in secured land filling[3] Advantage of incineration of E-waste is the reduction of waste volume and the utilization of the energy content of combustible materials.

By incineration some environmentally hazardous organic substances are converted into less hazardous compounds. Disadvantage of incineration are the emission to air of substances escaping flue gas cleaning and the large amount of residues from gas cleaning and combustion. The entire E-waste treatment is being carried out in an unregulated environment, where there is no control on emissions. There are two E-waste dismantling facilities in formal sector in India. These facilities are in Chennai and, Bangalore

Recycling

The recycling of E-waste is a major concern in India. The workers in the recycling sector are dominated by the urban poor with very low literacy levels and hence they have very little awareness regarding the potential hazards of E-waste. Among the urban poor, there are a substantial number of women and children engaged in various recycling activities which further exaggerate the problem of E-waste as they are more vulnerable to

the hazards from this kind of waste[4] Collection centers are currently present only in a few cities in India and the collection process for these facilities are restricted due to logistical and geographical problems. There is no recycler for materials of lamps (CFL bulb, tube light etc.) in India because of cheaper sources in China. Hence lamp recycling is a great challenge in India. There is no recycler for Ni-Cd batteries, alkaline batteries and Dry cell batteries within the country. Such materials are either dumped in landfills resulting in loss of resources or exported to authorized recyclers in foreign countries resulting in logistic costs. There is a lack of authorized recyclers for Ni-MH batteries and Li-ion batteries in the country. There are some back-yard recyclers for Ni-MH and Li-ion batteries but are unregistered with the MoEF. Therefore formal intermediate recyclers (like E-Parisaraa) are unable to dispatch them

Ineffective Legislation

Even the basic E-waste rules and guidelines have not been uploaded in official website. So the details of e waste generators and handling teams information make the e-waste management cannot be properly accomplished. There is no centralized mandatory or strict legislation in this regard. For better management, the legislation must clearly define e-waste and the limitations in terms of quantities of e-waste generated.

Lack of Infra structure-

There is huge gap between present recycling and collection facilities and quantum of E-waste that is being generated. No collection and take back mechanisms are in place. There is lack of recycling facilities.

Involvement of Child Labour

In India, about 4.5 lakh child laborers in the age group of 10-14 are observed to be engaged in various E-waste activities and that too without adequate protection and safeguards in various yards and recycling workshops. So, there is a urgent need to bring out effective legislation to prevent entry of child labor into E-waste market- its collection, segregation and distribution

Health Hazards

E-waste contains over 1,000 toxic materials, which contaminate soil and ground water. Exposure can cause headache, irritability, nausea, vomiting, and eye pain. Recyclers may suffer liver, kidney and neurological disorders. Due to lack of awareness, they are risking their health and the environment as well

Poor awareness and sensitization

Limited reach out and awareness regarding disposal, after determining end of useful life. Also Only 2% of individuals think of the impact on environment while disposing off their old electrical and electronic equipment.

Volume of waste generated

India stands fifth in e-waste generation producing around lakhs metric tonnes per annum

Lack of research-

Government must encourage research into the development and standards of hazardous waste management, environmental monitoring and the regulation of hazardous waste-disposal. Many more environmental epidemiological studies are required to assess the present status of e-waste management system in India, to assess the e-waste quantities and exact amplitude of the problem in Indian cities, and to establish relationships with the informal recycling sectors. The valuable data will be generated by these studies that would help in drafting an action plan for e-waste management

E-waste imports –

Cross-border flow of waste equipment into India- 80 percent of E-waste in developed countries meant for recycling is sent to developing countries such as India, China, Ghana

Reluctance of authorities' involved

Lack of coordination between various authorities responsible for E-waste management and disposal including the non-involvement of municipalities and Nigeria

Security Implications-

End of life computers often contain sensitive personal information and bank account details which, if not deleted leave opportunity for fraud

E Waste management world scenario

The Basel Convention

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal is the most comprehensive global environmental agreement on hazardous and other waste. The Basel Convention contains specific provisions for the monitoring of its implementation and compliance. A number of articles in the Convention oblige the Parties to take appropriate measures to implement and enforce its provisions, including measures to prevent and punish conduct that breach the Convention.

The Bamako Convention

The Bamako Convention or the Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement of Hazardous Wastes was adopted by the twelve nations of the Organization of African Unity at Bamako, Mali in January, 1991, and came into force in March, 1999.¹⁵³ The Convention aims to protect human health and environment from dangers posed by hazardous wastes by reducing their generation to a minimum in terms of quantity and/or hazardous potential

The Rotterdam Convention

Like the Bamako Convention, the Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Chemicals and Pesticides in International Trade regulates trade in hazardous wastes but contains no commitment to reduce their use and release. Adopted in September, 1998. India had acceded to the convention on 24 May 2005. The Rotterdam Convention calls on exporters of hazardous chemicals to use proper labeling,

include directions on safe handling, and inform purchasers about known restrictions or bans. Parties can decide whether to allow or ban the import of chemicals listed in the treaty, and countries exporting chemicals are obliged to make sure that producers within their jurisdiction comply with the directions and rules[5]

Waste Electrical and Electronic Equipment (WEEE) Directive in the European Union

In May, 2001, the EU Parliament approved a directive that required producers of electronic gazettes to take responsibility—financial and otherwise—for the recovery and recycling of e-waste. Recognizing the scope and urgency of e-waste problem, the European Union has taken the lead in addressing it by proposing an ambitious system of the Extended Producer Responsibility (EPR).

Restriction of Hazardous Substances (RoHS) Directive

As a legislative initiative to solve the problem of huge amounts of toxic e-waste, a Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment, namely 2002/95/EC, commonly referred to as the Restriction of Hazardous Substances Directive or ROHS was adopted in February 2003 by the European Union

Communication on the use of the Precautionary Principle

On 2 February, 2000, the European Commission adopted the communication on the use of the Precautionary Principle. Application of this Principle would help prevent the use of some high risk products in electrical and electronic equipments to some extent.

Switzerland

It is the first country in the world with established formal WEEE/E-waste management system, where legislation on E-waste management was introduced in 1998. This legislation is based on the principle of the Extended Producer Responsibility (EPR). In Switzerland, there is control at every stage or phase of the WEEE/E-waste trade.

United States of America

United States Environment Protection Agency (EPA) initiated a green National Electronics Action Plan (NEAP) 170 in 2005 in order to address environmental concerns arising out of the entire life cycle of electronics, including design, operation, reuse, recycling and disposal of equipment. Unlike the European Directives, the NEAP focuses mainly on computers, televisions and cell phones. Instead of emphasizing on the principle of the Extended Producer Responsibility, the EPA places responsibility for products on a broader group of entities, including manufacturers, retailers, users and disposers. The US is involved in a number of initiatives and programmers aimed at reducing e-waste. For instance, the US, Canada and Mexico are the members of the North American Pollution Prevention Partnership, which focuses on clean electronics in North America. However, the US Government has not yet ratified the Basel Convention and the Ban Amendment. There is also no federal legislation in place prohibiting or regulating e-waste generation, disposal and export

China

Electronic waste in China has gained world-wide attention as a serious environmental issue. Guiyu in Guangdong Province is the location of the largest electronic waste site on earth. Chinese laws are primarily concerned with eliminating the import of e-waste. China has ratified the Basel Convention as well as the Basel Ban Amendment, officially banning the import of e-waste. In October, 2008, the Chinese State Council also approved a draft regulation on the management of electronic waste with the objective of promoting the continued use of resources through recycling and monitoring the end-of-life treatment of electronics. Under the new regulations, the consumer is required to recycle electronic products. It also requires the recycling of unnecessary materials discarded in the manufacturing process.¹⁷⁵ The Restriction of Hazardous Substances (ROHS) in China, officially known as the 'Administrative Measure on the Control of Pollution Caused by Electronic Information Products' is a Chinese Government regulation to control certain materials, including lead. It was jointly promulgated by the seven Government Departments and administrations of the People's Republic of China (PRC) in February, 2006 and became effective from 1 March, 2007.¹⁷

Legal attempts to e waste management in India

In India, the Constitution assigns solid waste management as a primary responsibility to the Municipalities under the Twelfth Schedule. Article 243W empowers the State Legislatures to frame legislations in respect of waste management^[6]. The Municipal Solid Wastes (Management & Handling) Rules, 2000 were enacted by the Central Government which came into force from 25 September 2000. Some of the guidelines for handling municipal solid wastes provided in the Schedules are relevant for the management of e-waste and can be used as a model in the e-waste recycling and disposal scheme

In view of the ill-effects of hazardous wastes to both environment and health, several countries exhorted the need for a global agreement to address the problems and challenges posed by hazardous waste. However, the policy level initiatives regarding E-waste in India is quite rudimentary and needs immediate attention. Following are some of the policy level initiatives in India regarding E-waste.

The Hazardous Wastes (Management and Handling) Amendment Rules, 2003

Under Schedule 3, E-waste is defined as "Waste Electrical and Electronic Equipment including all components, sub-assemblies and their fractions except batteries falling under these rules". The definition provided here is similar to that of Basal Convention. E-waste is only briefly included in the rules with no detail description.

Guidelines for Environmentally Sound Management of E-waste, 2008

This guideline was a Government of India initiative and was approved by Ministry of Environment and Forest and Central Pollution Control Board. It classified the E-waste according to its various components and compositions and mainly emphasizes on the Electronic waste in India:

The e-waste (Management and Handling) Rules, 2011

This is the very recent initiative and the only attempt in India meant solely for addressing the issues related to E-waste. These rules are not implemented in India as yet and will only come into practice from 1st May, 2012. According to this regulation, 'electrical and electronic equipment' means equipment which is dependent on electric currents or electro-magnetic fields to be fully functional and 'e-waste' means waste electrical and electronic equipment, whole or in part or rejects from their manufacturing and repair process, which are

intended to be discarded. These rules are meant to be applied to every producer, consumer or bulk consumer involved in manufacturing, sale purchase and processing of electrical and electronic equipment, collection centers, dismantlers and recyclers of e-waste. Responsibilities of producers, collection centers, consumers, dismantlers, recyclers etc. are defined and incorporated in these rules.

Hazardous and other Wastes (Management and Transboundary Movement) Rules, 2015

No import of the hazardous and other wastes from any country to India for disposal shall be permitted. (2) The import of hazardous and other wastes from any country shall be permitted only for recycling, recovery, reuse and utilization including co-processing. And it imposes certain duty on the occupier for management of hazardous wastes[7]

E-Waste (Management) Rules, 2016[8]

1. To address leakage of e-waste to informal sector at all the stages of channelization. The roles of the State Government has been also introduced in the Rules in order to ensure safety, health and skill development of the workers involved in the dismantling and recycling operations. The transportation of e - waste shall be carried out as per the manifest system whereby the transporter shall be required to carry a document (three copies) prepared by the sender, giving the details.

Conclusion

There is no large scale organized E-waste recycling facility in India and the entire recycling exists in unorganized sector. Moreover, the management practices are often poorly designed and have a lot of health and environmental repercussions. The lack of public awareness regarding the disposal of electronic goods and inadequacy of policies to handle the issues related to E-waste enhance the problem in India. In most of the cases, the bulk of E-waste remains unattended in households and public offices. Rarely some sectors like some of the IT companies practice Extended Producer Responsibility or Take Back Policies. Due to the lack of awareness, some people discard E-waste with regular municipal solid waste which is an extremely dicey practice. A Global protocol on e waste trading needs to be built under the Basel convention and US must be encouraged to participate. The US which is the major e waste contributor in the world should ratify the Basel convention. The convention currently covers only the trading of toxic waste; it should be extended to encompass e-waste and second-hand electronic products. Strict criteria must be agreed globally to distinguish products by durability, usability and safety There should be a stringent action from government to enact a law which binds the occupier and users and those operating illegally should be fined or prosecuted Developed countries must crack down on defunct products being traded as used ones. Developing countries must ban imports of toxic e-waste. Customs duties on e-waste should be increased. United Nations role on launching a global industry association to certify processing firms that meet agreed legal, technical and environmental criteria. It should encourage the transfer of processing and recycling technology from developed to developing nations. It should create a global e-waste disposal fund to which exporting countries and manufacturers would contribute for each product they sell. Any country responsible for disposal should receive a fee that is 2–5% of the original production cost, and ensure that an appropriate and verifiable disposal procedure is implemented. Certified firms would get subsidies from the fund according to how much they process. The same industry body should launch a global monitoring system to track flows around the world over the whole life cycle of e-products. Components such as circuit boards and the compressors in refrigerators and air-conditioners could be labeled with radio-frequency identification tags. consumers' responsibility for e-waste

needs to be enshrined in regulations, taking lessons from Japan. Separate e-waste bins should be provided, with penalties for those who do not use them. Deposit mechanisms could be used when purchasing electrical goods, and people can get the money back when they send their waste to certified collectors.

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