E-Waste in India

By Praveen Dalal

The aim of this article is to analyse the menace of electronic waste (e-waste) in India. The use of Information and Communication Technology (ICT) cannot be ignored and dispensed with in the contemporary era and the same requires a sound and effective strategy as well. The benefits of ICT are also accompanied with certain drawbacks and nuisances that, if ignored, may be a big threat to India's environment. The ICT strategy of India must consider these aspects on a priority basis and the same must be an indispensable part and parcel of the Indian e-governance plan.

I. Introduction

Although, environmental pollution is said to be as old as the emergence of homo sapiens on the earth, the scientific and technological progress of man has invested him with immense power over nature and indiscriminate use of this power has resulted in endless and senseless encroachment on nature. Unfortunately, man by his failure to live in harmony with nature has brought humanity to the brink of a global environmental catastrophe. Man's greed attacks nature, environment and ecology and wounded nature backlashes on the human future[1]. Environment protection and its preservation is today the major concern all over the world. The environment proves that all the human activities on this earth are inter-connected. So much so that an environmental damage in the boundaries of one State has transborder ramifications. Environmental destruction and pollution has seriously threatened the human life, health and livelihood. This deleterious effect on the human beings was appreciated very soon in India and environment protection concerns can be found in the major literatures of ancient India. A great stress was laid down upon preservation and protection of the environment so that it can pass as a valuable resource from generation to generation. With the advent of industrialisation, globalisation and urbanisation and with the increase in the population, a greater pressure on the environment was asserted. It was exploited on a speed and rate higher that its regeneration. It was felt that if human beings have to survive, the environment has to be protected on a priority basis. At the international level, various Treaties and Conventions were adopted to regulate the misuse and exploitation of the environment. The Constitutions of many countries were amended to incorporate these changes. Various principles like Polluter Pays Principle, Precautionary Principle, etc were developed to give environment its due. The best shift was towards the concept of "Sustainable Development" that allows use of environment within tolerable limits and at the same time allowing the growing needs of development. The right to wholesome environment has been raised to the status of a Human Right and Fundamental Right. To give this benign drive a thrust, the benevolent concept of Public Interest Litigation has been used liberally in favour of environment protection. There is, however, a need to preserve and protect environment on a voluntary basis. This is expected more from companies operating in India as they are in a better position to protect and preserve the environment. The resources, technology and expertise they possess can

protect environment in its most benign form. They can anticipate possible environmental disasters and wrongs and can take a timely action. Thus, the “preventive approach” must be preferred over “curative approach” as certain environmental damages are irreversible in nature. This is the reason why the environmental jurisprudence in India shifted from “strict liability” to “absolute liability”. The absolute liability, unlike strict liability, does not consider any exceptions that may be used to avoid liability arising out of environment damages.[2] This need of “absolute liability” originates from the use of hazardous substances for the production purposes. The same also comes into picture where these hazardous substances are otherwise dealt with other than production purposes, i.e. dismantling or recycling purposes. One such hazardous activity is the management of “e-waste”.

II. The concept of e-waste

E-waste is a popular, informal name for electronic products nearing the end of their "useful life." Computers, televisions, VCRs, stereos, copiers, and fax machines are common electronic products. Many of these products can be reused, refurbished, or recycled. Unfortunately, electronic discards is one of the fastest growing segments of our nation's waste stream.[3] Rapid obsolescence of electronics goods, compounded by dumping from developed countries, has brought the e-waste problem in India to the brink of spilling over into an acute crisis. The communities that are affected by the toxics in e-waste need not necessarily be those that are creating the waste. The unethical export of e-waste by industrialised nations to developing countries is shifting the onus of development to communities ill-equipped to deal with such waste.[4] A lot of these materials are being sent to developing nations under the guise of reuse—to bridge the digital divide.[5]

III. International perspective

The Basel Convention defines waste by its disposal destination or recovery processes. These various processes are listed in Annexure IV of the Convention. For example, virtually any material that will be recycled or processed in order to reclaim a metal, or to reclaim an organic or inorganic substance for further use, is deemed a waste. Electronic components that are used without further processing are not likely to be defined as a waste. The Convention has provided for two lists. List A, found in Annexure VII, is presumed to be hazardous and thus covered by the Basel Convention; and List B, found in Annexure IX, is presumed to be non-hazardous and thus not subject to the Basel Convention. The waste listed in List A is waste that poses serious threats to environment and human health. As a result of their adverse effects these substances require special handling and disposal processes. The Annexure VIII hazardous waste list has the following entries applicable to e-waste:

A1180: Waste electrical and electronic assemblies or scrap containing components such as accumulators and other batteries included in List A, mercury-switches, glass from cathode-ray tubes and other activated glass, and PCB-capacitors, or contaminated with Annex I constituents (for example, cadmium, mercury, lead, polychlorinated biphenyl) to an extent that they possess any of the characteristics contained in Annexure III.

From the above we can gather that at the very least, circuit boards, CRTs, and other electronic boards or components and assemblies containing lead based solders and copper beryllium alloys (which include most computer circuit boards and much other electronic equipment), are indeed hazardous wastes according to the Basel Convention. Likewise, whole, used, discarded computers, printers, and monitors that contain such circuit boards or CRTs that are not to be re-used directly are to be considered as hazardous waste and subject to the Basel Convention. To date, the United States is the only developed country in the world that has not ratified the Basel Convention. In fact, US officials have actively worked to defeat and weaken the Basel waste export ban. The US government policies appear to be designed to promote sweeping the e-waste problem out the Asian back door. Not only has the US refused to ratify the Basel Convention and Ban, but in fact, the United States government has intentionally exempted e-waste materials, within the Resource Conservation and Recovery Act, from the minimal laws that do exist (requiring prior notification of hazardous waste shipments) to protect importing countries.[6]

The 160-State Basel Convention is the world's most comprehensive environmental agreement on hazardous and other wastes. Governments are expected to minimize the generation of hazardous wastes, treat and dispose of wastes as close as possible to their place of generation and reduce the quantities transported. The proper implementation of the Basel Convention ensures that hazardous e-waste be managed in an environmentally sound manner as it provides the tools for the transparency and traceability of e-wastes destined for recycling or recovery. The development of international resource recycling systems would have to be combined with a mechanism capable of monitoring such systems to ensure their accountability. That could not be achieved, however, without intensified international efforts to help developing countries strengthen their capacity to implement the Convention.

A programme of action in the Asia-Pacific region to dispose of electrical and electronic waste in an environmentally sound way and stop its illegal trafficking was also launched with the support of the United Nations Environmental Programme's (UNEP) Basel Convention Regional Centres in China, Indonesia and Samoa. Due to rapid industrialisation, several developing countries in the Asia-Pacific region need to access large quantities of secondary raw materials. As a result, large amounts of used and end-of-life electronic wastes are being sent to them for recycling, recovery and refurbishment of non-ferrous and precious metals at facilities which do not always meet high environmental standards.[7]

IV. Indian perspective

To combat the ever growing e-waste problem, India needs to have strong rules and regulations in place. Over the years, the government has instituted a number of regulations for better management of hazardous waste in the country. Some of these regulations are

given below:

(a) Hazardous Wastes (Management and Handling) Rules, 1989/2000/2003: These define hazardous waste as “any waste which by reason of any of its physical, chemical, reactive, toxic, flammable, explosive or corrosive characteristics causes danger or is likely to cause danger to health or environment, whether alone or when on contact with other wastes or substances.”

In Schedule 1, waste generated from the electronic industry is considered as hazardous waste. Schedule 3 lists waste of various kinds including electrical and electronic assemblies or scrap containing compounds such as accumulators and other batteries, mercury switches, glass from cathode ray tubes and other activated glass and PCB capacitors, or contaminated with constituents such as cadmium, mercury, lead, polychlorinated biphenyl or from which these have been removed, to an extent that they do not possess any of the constituents mentioned in Schedule 2.

(b) DGFT (Exim policy 2002-07): Second hand personal computers (PCs)/laptops are not permitted for import under EPCG scheme under the provisions of para 5.1 of the Exim Policy, even for service providers. Second-hand photocopier machines, air conditioners, diesel generating sets, etc, can also not be imported under EPCG Scheme under the provisions of Para 5.1 of EXIM Policy even if these are less than ten years old.

(c) MoEF Guidelines for Management and Handling of Hazardous Wastes, 1991
(d) Guidelines for Safe Road Transport of Hazardous Chemicals, 1995
(e) The Public Liability Act, 1991
(f) Batteries (Management and Handling) Rules, 2001
(g) The National Environmental Tribunal Act, 1995
(h) Bio-Medical Wastes (Management and Handling) Rules, 1998
(i) Municipal Solid Wastes (Management and Handling) Rules, 2000 and 2002

Unfortunately, none of these regulations deal directly and specifically with e-waste.[8] This situation requires the enactment of a special law dealing with the nuisance of e-waste. Even as the United States pushes India to relax its restrictions on importing used computers and parts, shiploads of illegally imported equipment from the US and other developed countries are swamping India, contributing to a growing "e-waste" problem. India and the United States are engaged in tough negotiations over import of second-hand computers and parts, with the US insisting that India allow more liberal importation of "pre-used" hardware, according to reports. India prefers to stick to its norm of importing hardware that has at least 80% residual life left. Unlike the developed countries, there are no set norms for handling of electronic waste, and secondly cheap labor not only makes disposal cost-effective and profitable for local traders but also encourages the developed countries to push electronic wastes to the countries like India. The two largest nations exporting their e-wastes are the United States and Britain. According to a recent British Environmental Protection Agency report, Britain shipped out 25,000 tons of e-waste to South Asia last year. The United States bought a staggering $125 billion worth of electronic goods in 2005, and reportedly for every PC the country bought, one was discarded. Industry sources say in

2005 the US recycled about $2 billion worth of electronic equipment, which may be just 20% of the e-waste it generated, much of which found its way to India, China, Southeast Asia and Africa. Electronic hardware discarded globally has skyrocketed, with 20 million to 50 million tons generated every year, Greenpeace says.[9]

In partnership with various non-governmental organizations, independent bodies and governmental bodies -- including the Indian Ministry of Environment and Forests as well as the Central Pollution Control Board -- TERI[10] is responsible for kick-starting a program that lays out organizational procedures for e-waste recycling. The goal, according to experts at TERI, is to make recycling of computers more efficient -- ensuring that while no part of the computer is wasted, standards will become more environmentally friendly. An additional factor is geared toward protecting those workers exposed to the various radioactive fumes emitting from the e-waste they are handling. Beginning the project in December 2005, TERI has since brought in experts from Europe to begin training Indian institutions in efficient recycling practices. The project has also partnered with advisers from the University of Dresden in Germany and the University of Crete in Greece.[11]

V. The roads ahead

The adoption of an ambitious e-governance plan by India is a good sign and we can hope that the e-waste management will also find favour with the Government soon. The concept of "absolute liability" is deterrent enough for the Government and private entrepreneurs to take environmental issues seriously. This is more so since the defense of "sovereign immunity" is also not available to the Government for tortuous liability. In short, e-governance presupposes the handling of various hazards originating out of and associated with the use of ICT and there is no reason to exclude the same from national policies pertaining to ICT and e-governance.

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Arbitrator, Consultant and Advocate, Supreme Court of India.
Managing Partner-Perry4law (Legal firm).
Contact at: pd37@rediffmail.com/ perry4law@yahoo.com

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