Piles of debris
Maharashtra, Tamil Nadu produce maximum electronic waste in the country; Andhra Pradesh comes a close third

Figures in tonnes (2004-05)
CHAPTER- IV
E-waste management laws in India

4.1. Global trade of perilous wastes in South Asian nations

Among all the international agreements on trade of perilous compounds, the Basel Convention on the ‘Control of the Trans-boundary Movement of Perilous Waste and Their Clearance’ is the mainly comprehensive global ecological agreement on perilous and other wastes. It was adopted for the purpose to protect human health and the environment against the adverse effects resulting from the e-waste generation, its management, and check cross-border movement and for clearance of perilous and other wastes. Substantially, it did not mention e-waste. It addressed the issues of electronic waste along with end-of-life ships at the Conference of the Parties of the Basel Agreement in late 2006. Currently, electronic waste, mobile phones, Polychlorinated Biphenyls (PCBs) and compounds used in industry as heat exchange fluids in electric transformers and capacitors are among the wastes regulated by the Basel Convention. Many of the world-wide e-waste exports, consequently, are in contrary to the Basel Convention.

4.1.1. Rise in unlawful e-waste trade

In August 2006, when the Abidjan Perilous Wastes Crisis\(^{121}\) exposed the occurrence of unlawful perilous waste exports from Europe, the UNEP Executive

\(^{121}\) A ship called the Probo Koala, chartered by the Swiss-based oil and commodity shipping company Trafignura Beheer BV, offloaded noxious waste at the port of Abidjan in Cote d’Ivoire (Ivory Coast). The waste was then dumped by a local contractor at as various as 12 sites in and around the city of Abidjan in (Aug. 2006). According to the UN and the Government of Cote d’Ivoire, the gas caused by the release of these chemicals resulted in the deaths of 17 and the injury of over 30,000 Ivorians with injuries that ranged from mild headaches to severe burns of skin and lungs. Almost 1,00,000 Ivorians sought medical attention for the effects of these chemicals.
Director, Achim Steiner acknowledged:

“As global trade flows expand and tough domestic controls raise the outlay of perilous wastes clearance in developed nations, the opportunities and incentives for unlawful trafficking of wastes will continue to grow.”122

It is an affirmation of the rising trend in the trade-out of perilous wastes by fraudulent means in international trade. Many studies have confirmed and revealed the danger posed by various wastes, their toxicity, carcinogenicity and other characteristics are detrimental to the human health and environment. This awareness has been the basis of world-wide actions leading to the tightening of laws and regulations. This has, in turn, triggered an increase in the outlay of perilous waste clearance in the course of safer means compelling various nations to search for extra economically viable ways of disposing waste abroad. As a result, various developed nations, which are able to circumvent the Indian legislations, trade-out perilous wastes together with electronic wastes to the emerging nations. These nations are having neither the knowledge of the perilous nature or having rudimentary knowledge, nor the capacity to dispose off the wastes safely. Normally, a computer recycler in the U.S., for instance, would scan the incoming electronic waste resources for its mainly valuable elements and probably sell them in a store or to specially brokers. The rest of the material would be broken down and sorted according to the type of waste (circuit boards, wires and cables, plastics, cathode ray tubes (CRTs) and non-recyclables). These are sold to the brokers who then ship them mainly to China or the South Asian nations i.e., India, Pakistan and Bangladesh. Alternatively, the e-waste resources are sometimes simply sold off in bulk without any separation whatsoever. E-waste brokering is an aggressive and competitive industry and buyers for all kinds of e-waste for the Asian marketplace are always available.

4.1.2. Foremost factors in global waste trade economy

In international waste trade, e-waste trade-out to the emerging nations is governed by brute global economics in which market forces, if left unregulated, dictates that the noxious waste will always run ‘downhill’ on a financial path of least resistance.\textsuperscript{123} Illegal trade-out becomes possible when the environment and occupational regulations are non-existent, minimal, lax or not well-enforced, as they are in a few emerging nations. Low labour outlay in these nations also facilitates the impetus for the trade-out in wastes. For instance, labour outlay in China is 1.50 US dollars per day for waste management.\textsuperscript{124}

In addition to this, exporting e-waste is an extra lucrative incentive for the exporter nation than remanufacturing or disposing it inside the nation. For instance, waste traders in Europe or United States of America have to pay 20 US dollars to recycle a computer safely in their nations while they can sell it at half the outlay to the informal traders in emerging nations.\textsuperscript{125} Again, it outlay 12,000 rupees to recycle a tonne of rubbish after segregation in the U.K., while shipping the rubbish to India outlay just regarding 2,800 rupees.\textsuperscript{126}

The U.S. produced five times more perilous waste in 2002 (265 million tonnes) than it did in 1975 (57 million tonnes). The outlay of managing such waste inside U.S. would be enormous depending on the toxicity and reactivity of the compounds. Thus, it would be more economical to ship noxious wastes to the emerging nations when the outlay is negligible. Considering its outlay effectiveness, trade-out is a clandestine option chosen by a few companies in the industrialized nations. The unlawful exports are mostly justified as ‘charity’ or as ‘remanufacturing’. Through these methods, obsolete devices find their way from the industrialized nations to the emerging nations where they can be used for a

\textsuperscript{123} The Basel Action Network (BAN) and Silicon Valley Toxics Coalition (SVTC), Exporting Harm, The High-Tech Thrashing of Asia (Feb. 25, 2002)
\textsuperscript{125} G.S. Mudur, “Rest in Pieces”, The Telegraph (Mar. 28, 2004)
\textsuperscript{126} Radha Venkatesan, “Is India a global trash can?”, The Times of India (Apr. 24, 2010)
few more years. For instance, in 2005, out of nearly 5 million Personal Computers in India, 1.38 million were either model 486s (eight years old by 2005) or even older. Reuse or remanufacturing may prolong the life span of an artifact except sooner or later. It would find its way into the waste mainstream. Consequently, while the developed nations legally evade the problem of waste clearance, the emerging nations are left to reckon with the ultimate problem of waste clearance.

4.1.3. Waste trading as a quintessential part of electronics remanufacturing

Importing waste is no doubt a lucrative business. The main objective behind the trade-in of used electronics is the resurgence of valuable metals and elements that are contained in electronic waste, together with steel, aluminium, copper, tin, nickel etc. Which are in bulk and cadmium and mercury are in smaller amounts and barium, nickel, gold, titanium, cobalt, palladium, manganese, silver and platinum etc. in traceable amounts. These various commodities facilitate useful raw material feedstock in the manufacture of latest goods. The heftiest marketplace of a non-working equipment or e-waste is for the circuit boards that are rich in expensive metals, i.e. silver, gold, palladium and platinum. Sound management practices for the resurgence of these elements are debatable. Even, trade-out and trade-in trade has become an essential aspect of the electronics remanufacturing.

Furthermore, several of the markets for processed plastics and other raw resources derived from end-of-life electronics equipment are also outside of the U.S. In fact, there are no smelters for copper or for the resurgence of expensive metals from circuit boards in the U.S. The five primary copper and expensive metal smelters in the world are located in Canada, Belgium, Sweden, Germany and Japan. There are no Cathode Ray Tube (CRT) glass furnaces in North America and there are less than 20 in the world. There are approximately 15 in Asia (South Korea, Malaysia, India, Thailand, Singapore and China) and one in Poland. As the requirement for the CRT glass cullet remains strong, the number
of glass furnaces continues to be inadequate and insufficient. The challenge is further complicated by the Government restrictions.\textsuperscript{127}

4.1.4. Free international trade agreements as a means of waste trading

A muted aspect of the international trade in waste which has raised a few concerns is that developed nations similar to Japan are making full use of the Free Trade Agreements (FTAs) or so called ‘Economic Partnership Agreements’ (EPAs) to trade-out their waste to the emerging nations. Often involved in the EPA arrangements are unspoken *quid-pro quo* deals such as the Philippines promised access to domestic and nursing labour markets in Japan, or Thailand getting a package mass transit investment for Bangkok.\textsuperscript{128}

Since 2004, the Governments of Japan and Thailand have been formally negotiating an FTA that seeks to eliminate tariffs on an unprecedented list of Japanese perilous waste exports to Thailand. The latter would have to accept waste, together with slag, residues from incinerated municipal waste, chemical and allied industries and hospital waste.\textsuperscript{129} Other industrialized nations which have been exporting waste to the South-East Asian nations together with Thailand, Philippines and Indonesia in the course of existing loopholes that permit a few forms of waste being shipped for remanufacturing include the United States, Australia, Britain, New Zealand, Canada and South Korea.\textsuperscript{130}

Japan and the European Union (EU) have negotiated on a similar FTA with India which has resulted in enormous increase in the trade-in of waste severely hampering ecological safeguard measures in India. The India-European Union (EU)-FTA phrases a new name for waste. It mentions that “no new goods shall be understood to include notably used and remanufactured goods” and that

\textsuperscript{127} Institute of Scrap Remanufacturing Industries Inc. (ISRI), “Electronics Remanufacturing”, (Dec. 1, 2013)
\textsuperscript{128} Greenpeace, “Japan “Twisting Arms” of Asian Neighbours to Take Toxic Waste” (Feb. 16, 2007)
\textsuperscript{130} Ibid.
“non-latest goods” would not have any restrictions such as trade-in or trade-out tariffs. Thus, trade-in of waste could be treated just similar to trade-in of fresh goods.\textsuperscript{131}

The growing pressure on the emerging nations to trade-in waste in the course of bilateral or free trade agreements, is a cause of stern concern as it encourages the industry of remanufacturing wastes. It could also override the existing Indian and international laws against the perilous waste trade in, predominantly the Basel Convention and its world-wide Ban Amendment forbidding noxious waste exports to the emerging nations.\textsuperscript{132} For instance, despite the international ban, the U.K. could trade out nearly 23,000 million tonnes of electronic waste ‘illegally’ in 2003 to parts of South-East Asia, India and China.

### 4.2. Import of perilous e-waste in India

India is one of the heftiest waste importing nations across the globe. All types of wastes are trade-in into the India, in the form of cheap raw resources together with perilous and noxious wastes. Data released by the Customs Department reveal imports of even prohibited wastes similar to clinical waste, incineration ash, municipal waste and e-waste, all of which exceed 5 million tonnes annually. In 2009, India generated 5.9 million tonnes of perilous waste domestically and trade-in 6.4 million tonnes.\textsuperscript{133} It generates regarding 0.35 million tonnes of electronic waste every year and imports another 50,000 tonnes.

So far, India has been the destination of the perilous and industrial wastes similar to mercury, electronic and plastic wastes from the United States; asbestos from Canada; defective steel and tin plates from the European Union (EU), Australia and the United States of America; noxious waste oil from the United Arab Emirates, Iran and Kuwait; zinc ash, residues and skimming’s, lead waste

\textsuperscript{132} Ibid.
\textsuperscript{133} PP Sangal, “The challenge of perilous waste”, \textit{The Economic Times} (May 19, 2010)
and scrap, used batteries and waste and scrap of metals such as cadmium, chromium, cobalt, antimony, hafnium and thallium from Germany, Denmark, the Netherlands, the United Kingdom, Belgium and Norway. These wastes contain noxious elements which are causing damage to the public health and environment.

The Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 regulate the trade-out, trade-in or cross-border movements of perilous wastes together with e-waste. According to these rules, trade-in of perilous wastes for clearance is not permitted. Even if, trade-in of waste is permitted only for reuse, remanufacturing or reprocessing. Monitoring of units remanufacturing perilous wastes is the liability of the State Pollution Control Board or the Pollution Control Committee in a Union Territory. The Rules also require all trade-in consignments to be accompanied by a movement document and a test report from an accredited laboratory or a pre-shipment inspection certificate from a recognized agency.

The e-waste rules, 2011 do not address the issue of trade-in and trade-out of e-waste. The cross-border movement of perilous waste together with e-waste is regulated by the Hazardous Waste Rules, 2008. Import of e-waste can be considered for actual users only with the permission of Ministry of Environment and Forests and licence from Directorate General of Foreign Trade.

4.2.1. Liberalization of trade-in rules has increased volume of e-waste in India

International trade in remanufactured goods business turnover has already crossed 100 billion US dollars. Like other Asian nations, India has also felt the pressure from the developed nations to liberalize its trade-in rules to allow access to its markets for their remanufactured goods. It is argued by the nations similar to United States of America, Switzerland and Japan that promoting trade in

135 Comments and Suggestions made by the Ministry of Environment and Forests, Government of India (Apr. 19, 2011)
remanufactured goods helps both the developed and the emerging nations by increasing access to low outlay, superior quality goods while helping solid waste management and encouraging transfer of know-how and skills. But India is apprehensive that it could lead to a deluge of trade-in of low-quality cheap goods and actually amount to transfer of waste from the developed to the emerging nations. Thus, it has opposed suggestion by a few developed nations for more liberal trade in remanufactured goods or refurbished old goods apprehending that it could harm the India’s domestic industry and also have adverse ecological ramifications. Agreeing with the Government’s stand on the issue, Mr. Amit Mitra, Secretary-General of the Federation of Indian Chambers of Commerce and Industry (FICCI), has been quoted as saying:

“Unrestricted imports of remanufactured goods would adversely impact our domestic manufacturing segment and also have the risk of diluting safety standards and dumping of e-waste.”

4.2.2. Lacunae in e-waste legislations in India

Even if, a few provisions contained in a few precise policies enable trade-in of e-waste. For instance, India’s EXIM (Export-Import) guiding principle allows trade-in of the used computers not more than 10 years old, besides letting computers in as donations. The Foreign Trade (Development and Regulation) Act, 1992 provides for trade-in of computers and peripherals from zones which have been set up primarily for trade-out, i.e. EOU (Export Oriented Units), EPZ (Exports Processing Zones), STP (Software Technology Parks) and EHTP (Electronics Hardware Technology Parks) at a zero custom duty. These computers can be donated to the recognized non-commercial educational institutions, registered charitable hospitals, public libraries, public funded research and

development establishments and organizations of the Government of India and State or Union Territory Governments.\textsuperscript{137}

Furthermore, there is no EXIM code for trade-in used computers for donation purpose or for resale. Both used and latest computers are placed under the same EXIM code in the Indian Customs Tariff Act allowing exporters to club latest computers with the old ones. Besides, the Directorate General of Foreign Trade (DGFT) rules are flexible to enable the Customs Authorities to take on the spot decisions and facilitate rules exemption.

Thus, if a consignment of used computers is found without a license, traders manage to get their shipment released by paying a penalty. Importers also escape full penalty by an under assessment of illegally trade-in goods.

Such lacunae in law can be misused by the developed nations to trade-out perilous e-waste to the India. The e-waste rules, 2011 provides that:

“Every manufacturer, distributor assortment centre, refurbisher, dismantler, recycler, end-user or bulk end-user shall not trade-in used electrical and electronic equipment or elements in India for use. Except it can be trade-in for the purpose of repair or refurbishment or to fulfill obligations under the Extended Producer Responsibility (EPR)”.

Still e-waste could be trade-in under the pretext of metal scrap and used electrical equipments. It has been a matter of stern concern. As per the e-waste rules, 2011, the clause for trade-in of used electrical and electronic equipment in India for use has been deleted. Even if, as per the EXIM Policy of Ministry of Commerce, trade-in of used computers together with personnel computers, lap tops and refurbished or reconditioned spares is restricted.\textsuperscript{138}

\textsuperscript{137} Report on Assessment of Electronic Wastes in Mumbai-Pune Area, Maharashtra Pollution Control Board, Mumbai, March (2007)
\textsuperscript{138} Comments and Suggestions made by the Ministry of Environment and Forests, Government of India (Apr. 19, 2011)
4.2.3. Porous ports and lack of checking services

Among all ports, the Mumbai Port Trust and the Jawaharlal Nehru Port Trust have been found to have the heftiest amount of perilous goods lying around.139 Much of the global e-waste, which is trade-in into India and finds their way into the ports, is labeled as waste or mixed waste paper consignments. Customs officials are unable to check every container because of shortage of men and machinery and resort to random checks. Of the 12 foremost ports and 14 intermediate ports in India, the Jawaharlal Nehru Port at Nhava Sheva has two scanning machines. It is the heftiest port in India, handling close to 50 percent of the India’s port traffic. More than a million containers arrive at the port and the scanners have limitations. If cobalt-60, a radioactive substance, is packed in a lead box, the scanners would detect the lead only because the metal blocks radiation from cobalt-60. Besides, beaches and small ports have also grown to be hubs for unlawful trade-in of the perilous waste.

4.2.4. Procedure to import e-waste in India

The standard procedure followed for importing a consignment to India involves an importer, an exporter, an agency registered and notified by the Directorate-General of Foreign Trade, a bank and the customs department at the port. First, the importer is required to get a pre-inspection certificate of the trade-in material by a registered agency, which could be an Indian or a foreign company. After the agency issues the certificate, a bill detailing the number of containers, excise duty classification and artifact details is prepared. Thereafter, the consignment is shipped. When it reaches India, the customs officials at the port check the certificate, levy a customs duty on the artifact as specified in the Central Excise Tariff Act and release the consignment to the importer.

The e-waste trade is a thriving industry in India with strategic port cities similar to Singapore and Dubai serving as transit centers in the e-waste trade

139 “Mumbai Port has heftiest amount of perilous material”, The Times of India (Aug. 16, 2010)
route. E-waste from Australia, North America, South Korea and Japan is received in Singapore and dispatched again to the importing Asian nations together with India. Dubai also serves as a centre where scrap and wastes of all kinds from U.S.A., Europe and the West Asian nations are collected and re-exported. India is a foremost buyer from Dubai. The Dubai based exporters are well aware of the Indian domestic scrap market such that prices of any scrap are kept at par with the Indian market price.

The cross-border movements of perilous wastes, together with e-waste are regulated under the Hazardous Wastes Rules, 2008. As per these Rules, trade-in of e-waste is permitted to actual users in the India with permission of MoEF and licence issued by Directorate General of Foreign Trade (DGFT) for remanufacturing or reprocessing only. Import of e-waste by traders is not permitted.140

4.2.5. Instances of unauthorized waste imports seized in ports

India annually imports approximately 3.5 million metric tones of scrap metal worth 550 billion rupees, entering in India at a normal of 500 container loads daily. It is unloaded at any of the foremost and minor ports along the coast and transported to the Inland Container Depots throughout the India from where they enter a flourishing grey market.141 The Custom officials at regular intervals have intervened successfully and seized perilous goods entering the ports. In 2009, nine containers of perilous waste trade-in from Malaysia, Saudi Arabia and Barcelona by three diverse companies in Tamil Nadu were caught at the port of Tuticorin in Tamil Nadu.

In early 2010, twenty containers of perilous waste from Greece and Reunion, a French colony, trade-in by a paper factory in Tamil Nadu were sent back from the Tuticorin Port. In August, 2010, more than 120 tonnes of e-waste in

140 Comments and Suggestions made by the Ministry of Environment and Forests, Government of India (Apr. 19, 2011)
141 Shankar Roy Chowdhury, “Terror from Waste”, The Asian Age (May 4, 2010)
eight containers and trade-in from various nations by diverse companies were seized in Chennai. Of the total five consignments, one was from Australia, one from Canada, two from Korea and one from Brunei. Subsequent examination of the goods revealed that there were very old, used and unusable computer monitors, CPUs and processors, control panels, electrical motor parts, printers and keyboards.

A hefty proportion of the computer monitors were found to be more than ten years old and clearly meant for remanufacturing. These imports were found to be in direct violation of the provisions of the Customs Act, 1962 read with the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008. Even these instances of control of e-waste trade-in are few and amount of e-waste reaches in India is substantially very high. Lack of man-power, technology, funding for inspection are causes behind it.

4.2.6. Process of precious metal extraction from e-waste in unorganized e-waste industry

India has the label of being the second heftiest e-waste generator in Asia. According to a MAIT-GTZ estimate, India generated 330 billion tonnes of e-waste in 2007. More than 90 percent of the e-waste generated in the India ends up in the unorganized marketplace for remanufacturing and clearance. The unorganized segment mainly consists of the urban slums of the metros and mini-metros, where remanufacturing operations are carried out by the unskilled employees using the mainly rudimentary methods to reduce outlay. A study by the Basel Action Network (BAN) in partnership with the Toxic Link reveals that

143 “Manufacturers Association for Information Technology” or MAIT was set up in 1982 for purposes of scientific, educational and IT industry promotion in India. Deutsche Gesellschaft Fuer Technische Zusammenarbeit or GTZ has been active in India on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). GTZ cooperates with the Central Government and various State agencies with its priority areas for cooperation being sustainable financial development, energy, ecological guiding principle and conservation and sustainable use of natural resources
E-waste is received and processed in India in similar manner as is done in China or the condition could be even worse.

The unorganized segment consists of an assortment of small and informal businesses not governed by any stringent health and ecological regulations. Workers face perilous working conditions as they may be without protection similar to gloves or masks. Released gases, acid solutions, noxious smoke and contaminated ashes are a few of the mainly perilous threats for the workers and for the local environment.

Many workers function from homes to reprocess waste, further exposing themselves, their families and the environment to perilous toxins. For instance, to extract metals from circuit boards, gas torches are used to heat a board just enough to melt the solder, which separates the metal parts from the boards. Metals are also extracted by soaking the circuit boards in open acid bath followed by manual scrapping to extract copper and expensive resources next to open drains. In this segment, the dismantlers extract metals on their own or work with a big trader, earning regarding 100 rupee per day. Two motherboards usually weighing one kilograms outlay 230 rupees. A profit of 10 percent is made after selling the metals.144

The circuit board remanufacturing method involves either open burning of the circuit boards or using acid stripping. Both methods first involve removal of the chips, condensers and capacitors from the board. Very often child labour is employed to separate the parts from the circuit boards, utilizing wire cutters and pliers. After a few pin straightening, a few of the Integrated Circuits (IC) chips and elements are sold for reuse. The items that are not worthy of reuse go directly to the open fires to reduce them to metals. Following the chip extraction and burning, the boards themselves are burned in an open pit to retrieve the rest of the metal solder and copper. After burning, the ashes are floated in water to remove

lighter ash. Another method involves utilizing nitric acid on the circuit boards to remove gold and platinum. Both methods, open burning and acid baths are fraught with occupational health risks as well as risks to the people living in the surrounding society.

The circuit boards are sourced from the computer monitors, CPUs, keyboards, television and remote control sets, radios, cell phones and other electrical equipments. It is projected that regarding half of the circuit boards used in the equipments in India end up in Moradabad (Uttar Pradesh) also called ‘Peetal Nagri’ or the brass city.

4.2.7. E-waste economy in the organized sector

In July 2009, prearranged remanufacturers formed the e-waste recycler’s association except facing stiff competition from the unorganized sectors. They have been able to capture only 10 percent of the total share of the e-waste market. A problem faced by the prearranged segment is the lack of appropriate assortment and clearance mechanisms and appropriate technologies in the face of a hefty informal segment. Due to lack of appropriate assortment systems, households and institutions at times end up storing obsolete goods in their warehouses or storerooms. Even when these are sold or exchanged, they are refurbished and then resold. Only a small proportion of obsolete electronics goods actually find its way into the e-waste processing stream. This is the dilemma facing the 10,000 square feet formal e-waste dismantling unit in Noida (Uttar Pradesh) belonging to the TIC Group India Pvt. Ltd. This can process up to 500 tonnes of e-waste annually. But since June 2008, when it was launched, the unit has processed only 200 tonnes. Similarly, the Attero remanufacturing unit in Roorkee (Uttarakhand) is 3.5 billion rupees plants which can method 36,000 tonnes of waste in a year even if it is getting only 600 tonnes annually. The formal segment also lack refineries for expensive metals resurgence. Consequently, according to the e-

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waste recycler’s association formed by prearranged remanufacturers in July 2009, the only way to sustain formal industry in the current scenario is the license to trade-in. The Attero remanufacturing unit is the only recognized remanufacturing facility for e-waste in India which has the license to trade-in e-waste from the developed nations. Applications from other formal agencies are pending with the Ministry of Environment and Forests, Government of India.

Opinions even differ on the issue of license to trade in as the only way to sustain formal industry in the current scenario. The Toxics Link holds that the aim of e-waste management should be safeguarding environment rather than sustaining businesses. Allowing imports would mean various non recyclable perilous resources dumped in our landfills, which should not be allowed. The India generates very hefty quantities of waste and the vital need was to establish an effective assortment mechanism and not to permit waste trade-in to sustain capacity utilization of plants.146

Unlike the informal remanufacturers, the formal remanufacturers do not use any chemicals or incinerations and use ecologically effective methods. Clients of the formal remanufacturers include multinational companies which have to keep up with an environment friendly image and those which do not want their goods to enter the grey market and compete with their latest goods. Unlike the prearranged segment, the informal dealers refurbish and sell a computer, even if it can be classified as e-waste, with a few parts of it in working condition. Selling any part of a computer that is functional would fetch extra money than selling it as metal parts. About 10 percent of the e-waste generated every year is recycled and the remaining is refurbished.

Comparison of the e-waste economy between the informal and formal sectors in the table given below provides a comprehensive insight into the

146 Comments and Suggestions made by Mr. Satish Sinha, Associate Director, Toxics Link, New Delhi (Apr. 5, 2011)
methods, safeguards, capital investments and earnings involved in the e-waste industry:

**Table X- Comparison of the e-waste handling processes between the informal and formal sectors in India**

<table>
<thead>
<tr>
<th>INFORMAL SECTOR</th>
<th>FORMAL SECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cathode Ray Tubes (CRTs) are broken manually to separate its elements i.e., glass, metal and copper. The glass, comprising lead is sold to bakeries or bangle makers. Since it retains heat, the glass goes into the base of ovens. Phosphors, if inhaled can be noxious. The CRTs are sold to non branded television makers.</td>
<td>Components of the CRTs are separated by heating in a closed chamber, which sucks out phosphors from the elements. They are then crushed in shredder machines. Glass containing lead is sold to the companies that manufacture the CRTs.</td>
</tr>
<tr>
<td>2. Circuit boards have gold-plated brass pins, microchips and condensers which are separated by heating. Fumes released during heating are noxious. Gold-plated brass pins are soaked in acid to improve the gold and brass separately. Microchips and condensers are heated in big containers filled with acid to extract metallic parts.</td>
<td>Circuit boards are crushed in shredder machines. They are sent to approved smelters abroad, where after smelting at 1200°C, the metals in the circuit board collect together. Since smelting is carried out in closed chambers at high temperature. It is not perilous. The metals similar to lead, copper, nickel, tin, gold, silver, and palladium are then separated by electro-refining.</td>
</tr>
<tr>
<td>3. No safety precautions followed. Informal remanufacturers paid 200-300</td>
<td>Protective tools i.e., gloves, masks, shoes, caps are provided to employees.</td>
</tr>
</tbody>
</table>
rupees daily in Seelampur, 100-150 rupees in Moradabad.

5,000 rupees per month paid to unskilled workers.

4. Minimal capital investment is required. Cost includes price of e-scrap, bribes to transfer it across state borders and set up and run shops and rent for the workspace.

Investment for a dismantler is regarding 3 million rupees and for a remanufacturing plant, regarding 2.5 billion rupees.

As e-waste is a cheap source of raw resources while providing employment to various, there are those who advocate remanufacturing e-waste while stressing the need for safe remanufacturing and for setting up of more recycling plants. Commenting on the benefit of safe remanufacturing, the former President of India, Dr. A.P.J. Abul Kalam also said at the inauguration of the Attero Remanufacturing Plant in Roorkee in Delhi in January 2010:

"With metal prices rising, remanufacturing will help in sustaining our economy as it is much cheaper than extracting metals from its ore."147

In this regard, the UNEP report of July 2009 titled ‘Remanufacturing from E-waste to Resources’ has analyzed issues related to e-waste together with market impending of remanufacturing of e-waste and transfer of innovative technologies for selected 11 nations, together with India.

4.2.8. E-waste projection and remanufacturing in four foremost cities

The two main hubs where e-waste is recycled in the India are Delhi and Mumbai. The other two foremost hubs are Hyderabad and Bangaluru which have been the centers of the electronics and information know-how industry. They are among the top ten cities in India which have been generating e-waste. Their status as primary centers of the e-waste remanufacturing method, whether it concerns

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storage, dismantling, remanufacturing, refurbishing and distribution. This has been predictable spat of the electronic industrial expansion and development in these cities.

4.2.8.1. Delhi

A report by the Toxics Link in 2004 found that 70 percent of electronic waste collected at remanufacturing units in New Delhi was actually exported or dumped by the developed nations. According to the last survey conducted in 2007 on the extent of waste being produced in Delhi, it was projected that regarding 5,000 metric tonnes (MT) of perilous waste was produced annually. The amount of e-waste generated annually is regarding 12,000 tonnes. Even if not the leading generator, Delhi is the leading processing centre of e-waste in India. According to the study conducted by the GTZ in 2007, there were 25,000 workers refurbishing 10,000-20,000 tonnes of e-waste annually.

The work takes place in small unlawful units where neither regulations nor environment or health safeguards are in place. Due to lack of any facility for appropriate storage and clearance of such waste, mishaps similar to the ones that occurred in Mayapuri, where a worker got exposed to the radiation and in Mundka, where a plastic fire broke out, are the kind of risks that the workers face each day. Delhi has the tag of a wholesale scrap market where not only all kinds of waste are brought in except also stored and pre-processed before being sent out to other parts of India. The Government is in the method of acquiring land in Kanjhawala village in Delhi for the purpose of treating and disposing waste except till such time, waste would continue to be stored at common effluent handling plants and other generation points, posing a huge risk to those who come in contact with it.148

148 Neha Lalchandani, “No facility in city to store, dump perilous waste”, The Times of India (Apr. 10, 2010)
Once e-waste is trade-in, e-waste dealers in Delhi make bids on the sea-going containers at the inland depot situated at Okhla. The material is taken out, sorted and distributed between various remanufacturers according to the areas of specialization. Electronic waste in Delhi is mostly processed in Shastri Nagar, Turkman Gate, Seelampur, Mauzpur and Mustafabad. Eastern parts of Delhi similar to Mandwali are the epicenters of e-waste remanufacturing. Mandawali is known for all its metal work resurgence while areas similar to Bawana and Narela are huge centers for all kinds of remanufacturing and preprocessing work. It is said that only dismantling is done in Delhi. But, as per the reports of the Toxics Link, all the waste created from the pre-processing work gets dumped into the river or drains, posing risks to health and environment. The Government’s sealing drive and crackdown by the Environment Department over the past few years resulted in foremost part of the remanufacturing work shifting out to the satellite towns similar to Muzzafarnagar, Saharanpur and Meerut etc. There are various factors that contribute to the thriving e-waste remanufacturing industry in Delhi. Its status as the capital and hence its connectivity to all parts of the India is one of the primary factor. The various satellite towns are around it where several hundreds of small units treat waste and availability of cheap migrant labour.149

The e-waste hub on the north-eastern fringe of Delhi, the Seelampur market is also called the heftiest electronics dismantling marketplace in the India, where over 50 percent of used computers end up for sale and remanufacturing. Seelampur gets e-waste from across northern India and even as far as Bengaluru. The job of the dismantlers involves getting computers, breaking them into its basic parts and selling motherboards to traders in Moradabad. Apart from e-waste imports and supply from the neighbouring regions, another source of domestic supply of e-waste is the ‘kabadiwalas’ (waste pickers) who buy scrapped electronics from households. Auction News, a biweekly journal in Delhi also

published advertisements on scrap that offices or the Government departments want to auction. When remanufacturers gather in the offices concerned, auctions are held. In a few cases, scrap is sold by inviting tenders.

Since waste processing is unlawful in Delhi, the Government does not have an exact estimate of how much waste is produced in the city or how much is brought in for remanufacturing. Even if officials claim that the units have moved out of Delhi, they cannot be sure of the numbers as the work heftily takes place in the unorganized segment.

4.2.8.2. Mumbai

Since liberalization began in India, no other industry has performed so well against world-wide competition than the software industry. The Information Technology industry in India originated in Mumbai. Among Indian cities, Mumbai ranks first among top ten cities generating WEEE in India. Mumbai, the financial nerve centre of India is also India’s heftiest port city. The Mumbai to Pune industrial belt is one of the electronic items manufacturing hubs of the India. As a result, Mumbai is not only the port of trade-in for latest and used electronics. Furthermore, it is also a home to a hefty user and manufacturer base, both generating hefty volumes of e-waste. The e-waste remanufacturing market exists in a foremost way in Mumbai. The marketplace of e-waste in Mumbai is not concentrated in a single place except extend over diverse areas, each handling a diverse aspect of remanufacturing. The city has a hefty network of scrap traders, with the main centers in Kurla, Saki Naka, Kamthipura, Jogeshwari and Malad.150

In spite of the absence of appropriate know-how, each element is disassembled and recycled or reused in Mumbai. The general practices of remanufacturing of the mainly complex parts of PCs. For instance, circuit boards and PVC wires by open roasting and acid bath to improve diverse metals has been

150 Toxics Link, Mumbai “Choking on E-waste- A study on the status of e-waste in Mumbai” (Feb. 23, 2007)
observed in Mumbai. Most of the WEEE generated in the Pune and Pimpri Chinchwad Region is transported to the Mumbai Metropolitan Region (MMR) for further handling and distribution.

The items, which require extraction in the course of wet methods, are sold to traders from Delhi. Even if it is claimed nothing is dumped in open fields, the report prepared by the IRG Systems South Asia under the aegis of the Maharashtra Pollution Control Board (MPCB) acknowledges that the hazards involved in artifact remanufacturing can cause ecological damage.

The urgent need to have a well coordinated mechanism on the assortment, handling and clearance of the e-waste in the MMR has been recognized. E-waste has been identified as a priority area by the MPCB and it has initiated certain initiatives to create awareness among various stakeholders on the e-waste. Started in 2009, the project to set up the first plant for scientific remanufacturing of e-waste generated in the region is operational from 2010. The capacity of the plant would be around 7,500 tonne per annum, which can be increased. The plant is functional, the contractor can establish e-waste assortment channel in the region.  

As per nation-wide e-waste assessment study, Mumbai generates maximum wastes among all the cities in India. Total electrical and electronic waste generation in Maharashtra is 20270.6 tonnes, out of which Navi Mumbai contributes 646.48 tonnes, Greater Mumbai 11017.06 tonnes, Pune 2584.21 tonnes and Pimpri and Chinchwad 1032.37 tonnes.

4.2.8.3. Bengaluru

In Bengaluru, the Silicon capital of India, e-waste remanufacturing is a multi billion industry where e-waste is received in Gowripalya and Nayandahalli. The e-waste scrap dealers send the segregated and dismantled e-waste parts to Delhi and Mumbai every alternative day. The e-waste remanufacturers earn

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151 “Mumbai to Start First Re-cycling Plant”, EBR (Energy Business Review) (Jul. 6, 2009)
152 Report on “Assessment of Electronic Wastes in Mumbai-Pune Area, prepared by IRG Systems South Asia Pvt. Ltd., New Delhi, Maharashtra Pollution Control Board, Mumbai (Mar. 2007)
around 0.2-0.3 million rupees a month from selling the dismantled e-waste to Delhi. There are a few remanufacturing centers in Karnataka similar to e-Wardd, e-Parisara, K.G. Nandini Recyclers, Ash Recyclers, New Port Computer Services India Pvt. Ltd. Recyclers and E-R3 Solutions Pvt. Ltd. In the formal segment, E-Parisara has been encouraged by the Central and State Pollution Control Board which would similar to it replicated in all foremost cities in India. The Board’s initiative attempts to carefully recycle old computers, their elements and other e-waste, generated by both IT companies and electronic manufacturers. The centre has tools to recycle up to three tonnes of waste a day, except is dealing with around one tonne right now. According to the owner, various corporate such as IBM, Tate Elxsi, ABB and Phillips are among its clients. But various foremost IT firms are yet to send their e-waste or stipulate difficult conditions for not sending their e-waste.153

Formal remanufacturing is yet to take up in a big way as industry is highly profitable in the unorganized segment. The unorganized segment has little incentive to convert into formal remanufacturing centers as both the private and the public segment prefer auctioning their e-waste to informal dismantlers and get good price for it.154

According to industry surveys, 8,000 to 10,000 tonnes of e-waste is generated each year by IT firms and electronics manufacturers in and around Bengaluru. While the heftier companies have warehouses for storing the waste, others sell them to small-time scrap dealers. The dealers, various concentrated around Mysore-Road, often employ women and children to deal with the scrap and remove usable metal. What cannot be used at all is thrown into fields and channels or burned under unsafe conditions. Apart from affecting the health of the employees of the scrap dealers, air, soil and ground water also get polluted.

Annual e-waste generation in Bengaluru from computer and printer, television and mobile phone is 6743.87 MT. In 2010, the total e-waste projection for Bengaluru with a population of 17.1 million was 123.6 tonnes, together with 92,240 computers, 15,371 televisions and 15,982 mobile phones. In 2013, with a projected population of 18 million people, the total e-waste volume has reached 130.4 tonnes together with 97,310 computers, 16,214 televisions and 16, 859 mobile phones.

4.2.8.4. Hyderabad
For sometime, Hyderabad has been known as the emerging Silicon capital of India. The annual e-waste generation has been projected for Hyderabad at 3,263 MT from computers, printers, television and mobile phones. The break up is as follows: 2110.25 MT from computers, 860.46 MT from printers, 261.07 MT from televisions and 52.28 MT from mobile phones. In 2010, the total e-waste projection for Hyderabad with a population of 7.4 million was 98.2 tonnes, together with 42,869 computers, 53,581 televisions and 1,713 mobile phones. In 2013, with a projected population of 8.2 million, the total e-waste volume has reached 107.9 tonnes, together with 47,117 computers, 58,890 televisions and 1,881 mobile phones.

Most of the e-waste collectors and remanufacturers only do size reduction (shredding) and segregation. Earth Sense Recycle Pvt. Ltd. and Ramky E-waste Remanufacturing Facility are two formal remanufacturing units in Andhra Pradesh. In 2009, an authorized recycler Earth Sense set up remanufacturing facility in Hyderabad in collaboration with e-Parisara of Bengaluru. The facility does size reduction by dismantling, shredding and segregation. After segregation, Earth Sense sends its waste to e-Parisara and in turn it gets exported to Belgium.

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155 Report on Inventorization of e-waste in two cities in Andhra Pradesh and Karnataka (Hyderabad and Bengaluru) sponsored by the World Health Organization (WHO), India Country Office, New Delhi; prepared by Environment Protection Training & Research Institute (EPTRI), Hyderabad
along with its waste for expensive metal resurgence. Resource recovering facility is available only in Belgium. Even if the formal remanufacturers exist, mainly the e-waste finds its way into unauthorized remanufacturing centers or to scrap dealers for quick money. In mainly these units, workers are mainly women and children. The report prepared by the Environment Protection Training & Research Institute (EPTRI), Hyderabad under the aegis of the WHO, New Delhi revealed that on an enquiry, the workers acknowledged that there was no health problem except a study needed to be taken up to find the actual pollution load generated and health problems among the workers.

With the fast rate of technological changes and growing dependency on information know-how and other modern electronic household items, the quantum of e-waste is set to rise in every electronic item. Since mainly the e-waste finds its way to the unorganized segment with profit as the prime motivating factor, e-waste remanufacturing undeniably requires better management and improved working environment guided by strict regulations.

4.3. E-waste management laws in India

The issue of electrical and electronic tool clearance, trade-in and remanufacturing has become the subject of stern discussion and debate among the Government organizations, environmentalist groups and the private segment manufacturers of computers and end-user electronic equipments. The Department of Parliamentary Standing Committee on Science & Technology, environment & Forests in its 192nd Report on the ‘Functioning of the Central Pollution Control Board’ (CPCB), has concluded that e-waste is going to be a big problem in the future due to modern life style and increase in the living standards of people and augmentation of financial expansion. The Committee has suggested a proactive
role for the CPCB by stating that it “should conduct studies to make future projections and devise steps to check the menace”.  

With the advancement stride that the India has made in the information technology segment and the electronic industry, the issue of trade-in of e-waste and its handling and clearance has assumed significance. The issue was brought to the notice of Parliament and Government on 23 December 2005 when a Private Member’s Bill on ‘The Electronic Waste (Handling and Clearance) Bill, 2005’ was introduced in Rajya Sabha by Shri Vijay J. Darda, Hon’ble Member from Maharashtra. The Bill had recognized that while there was no appropriate law or guideline on the handling and clearance of electronic waste in the India, every home had a number of electronic goods. And once these goods became obsolete or redundant, they were either thrown in the garbage or found their way to scrap dealers in the course of the ‘Kabariwalas’ who then dismantled the gadgets, kept what was useful and threw the rest in landfills. Criticizing the improper way of clearance as the electronic goods contain various elements which are perilous to health and environment, the Bill called for a regulation of e-waste clearance before the situation reached alarming proportions. The Bill sought to facilitate for appropriate handling and clearance of millions of tonnes of e-waste being generated by redundant electronic devices by prescribing norms and fixing responsibilities and duties on manufacturers, remanufacturers and end-users with regard to the clearance of e-waste and for all matters connected to it. The Bill, even, lapsed in July 2010 with the expiry of the tenure of the hon’ble member in the Rajya Sabha, but initiated a public urge of effective e-waste law in India.

In India, the Constitution assigns solid waste management as a primary liability to the Municipalities under the Twelfth Schedule. Article 243W empowers the State Legislatures to frame legislations in respect of waste

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156 Department of Parliamentary Standing Committee on Science & Technology, Environment & Forests, One Hundred and Ninety-second Report on “Functioning of Central Pollution Control Board”, Rajya Sabha Secretariat, New Delhi (Sept. 2008)
management. 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 remanufacturing and clearance scheme. The guidelines include organizing house to house assortment of waste i.e., appropriate assortment of waste from slums and squatters, hotels, restaurants, office complexes and commercial areas, organizing awareness programmes for segregation of wastes, adopting suitable waste processing technologies and restricting land filling for non biodegradable inert waste.

The Rules were examined by the Committee on Subordinate Legislation of Rajya Sabha. In its 186th Report on the said Rules adopted and presented to the Parliament in December 2009, the Committee while expressing concern on the inadequate and ineffective State laws, acknowledged the financial and technological constraints faced by Municipalities in the execution of the Rules. Furthermore, the Committee observed that with increasing urbanization finding landfill sites was going to get difficult for the ever increasing volumes of solid waste. The concerned Governments had to make sure that in the interest of public health, such landfill sites were located in ‘distant isolated places’. The Rules had to facilitate a safe buffer between landfill sites and human settlement. The Committee also envisaged solid waste management and reprocessing as an integral part of the present and future urban development and relates schemes and programmes.

It may be mentioned that after the enactment of the Environment Protection Act, 1986, the Central Pollution Control Board (CPCB) was delegated the functions to implement rules on perilous wastes, bio-medical wastes, municipal solid wastes and plastic wastes. Under the purview of the CPCB, the Division of Perilous Waste Management has been overseeing the management of e-waste. According to the CPCB, there are 36,165 industries in the India
generating regarding 6.2 MT (Metric Tonnes) perilous waste every year, of which landfill able waste is 2.7 MT, incinerable waste 0.41 MT and recyclable perilous waste 3.08 MT. Besides, as per the Department of Commerce, Ministry of Commerce and Industry, Government of India, over 10,000 items, together with perilous items, are trade-in to India. These items are classified under various heads. The category ‘others’ is given to those items that cannot be classified under any head. It is this category that traders often end up misusing to trade-in perilous waste.

4.3.1. Regulatory regime for e-waste

While the Municipal Solid Waste (Management and Handling) Rules, 2000 regulates the clearance of municipal solid wastes in an ecologically acceptable manner and the Hazardous Waste (Management, Handling & Transboundary) Rules, 2003 define and regulate all aspects of the perilous waste, there are no precise ecological laws for the management and clearance of e-waste. None of the existing ecological laws has any direct reference to the electronic waste or its handling as perilous in nature. Even, there are several provisions in these laws which have been applied to various aspects of the electronic waste.

4.3.1.1. The Hazardous Waste (Management and Handling) Rules, 2003

In 1986, India enacted its first comprehensive ecological law, namely, the Ecological (Protection) Act, 1986 (EPA) after the Bhopal Gas tragedy and as a commitment under the Stockholm Conference in 1972. Section 3 of the Environment (Protection) Act, 1986, gives all encompassing powers of setting standards, laying down procedures and supervision on the Central Government. The Rules under the EPA bestows upon the Union Government comprehensive powers to “take all such measures as is necessary or expedient for the purposes of

158 The United Nations Conference on the Human Environment, also known as the Stockholm Conference was the UN’s first foremost conference on international ecological issues and marked a turning point in the development of international environment politics.
protecting and improving the quality of environment and preventing, controlling and abating ecological pollution.”

In furtherance to the execution of the objectives of the EPA, the Hazardous Waste (Management and Handling) Rules were enacted in 1989. It was felt that it was essential to have a dividing line between waste and by-artifact streams. Thus, the Rules had to have a definition of ‘waste’ or a detailed enumeration to assist classification. It classified perilous waste into eighteen categories based on constituents present in it and the quantum of generation. These Rules were amended in the year 2000 primarily to bring them in line with the Basel Convention. The amendment made in the Rules in the year 2000 classified the waste by method of waste generation (Schedule-I) and as per their characteristics (Schedule-II). Classification of waste by ‘method of waste generation’ covers the perilous wastes generated in the diverse industrial methods used and method variants. Thus, 44 categories were identified comprising 148 waste streams in Schedule-I and 79 types of wastes in Schedule-II. The amendment made in the Rules in the year 2003 streamlined the list of methods/waste streams in Schedule-I. Thereby, the number of industrial methods generating perilous waste was reduced from 44 to 36 and the number of waste streams from 148 to 123. The Schedule-II was essentially left unaltered.  

Bringing further amendments to the Hazardous Wastes (Management and Handling) Rules, 1989, the draft amendment Rules, 2002 were notified as ‘The Hazardous Wastes (Management and Handling) Rules, 2003’ on 20 May 2003. Since e-waste or its constituents fall under the category of ‘perilous’ and ‘non-perilous waste’, they have been covered under its purview. As per the Rules, ‘perilous waste’ is defined as any waste which by reason of any of its physical, chemical, reactive, noxious, flammable, explosive or corrosive characteristics

159 Aditya Ecological Services Pvt. Ltd. (AESPL), Inventory of Perilous Wastes in Maharashtra, sponsored by Maharashtra Pollution Control Board (MPCB)
causes danger or is probable to cause danger to health or environment, whether alone or when in contact with other wastes or compounds.¹⁶⁰

Under Rule 3, ‘Definitions’, e-waste is defined as Waste Electrical and Electronic Equipment together with all elements, subassemblies and their fractions except batteries falling under these rules. Batteries are regulated by the Batteries (Management and Handling) Rules, 2001.

There are a few important features in Schedule I, II and III which cover e-waste.

Schedule-I defines perilous waste generated in the course of diverse industrial methods. Even if, there is no direct reference of the electronic waste, the ‘clearance method’ of e-waste could be characterized as perilous methods. The indicative list of these methods is:

- Secondary production or use of Zinc
- Secondary production of copper
- Secondary artifact of lead
- Production or use of cadmium and arsenic and their compounds
- Production of primary and secondary aluminum
- Production of iron and steel together with other ferrous alloys (electric furnaces, steel rolling and finishing mills, coke oven and by artifact plan)
- Production or industrial use of resources made with Organic silicon compounds
- Electronic industry
- Waste handling methods, like incineration, distillation, separation and concentration techniques

¹⁶⁰ “Hazardous Wastes (Management and Handling) Amendment Rules, 2003”, the Gazette of India Extraordinary, Part II, Section 3 Sub Section (ii), Published by Authority No. 471, New Delhi, Ministry of Environment and Forests Notification, New Delhi (May 20, 2003)
Schedule-II lists waste compounds which could be considered perilous except their concentration is less than the limit indicated in the said Schedule. E-waste or its fractions come broadly under this Schedule.

Schedule-III mentions the list of perilous waste to be applicable only for imports and exports. It has divided perilous waste into two parts, A and B. Part A of the Schedule deals with two lists of waste to be applicable only for imports and exports purpose. Export and trade-in of items listed in List A and B of Part A. These are permitted only as raw resources for remanufacturing or reuse.\textsuperscript{161} Electrical and electronic scraps as a perilous waste are covered under A-1180 in List A and B-1110 in List B. A-1180 is perilous under the rules whereas B-1110 is not perilous and is meant for direct reuse and not for remanufacturing or final clearance.

Wastes under List A are not allowed to be trade-in India without the Directorate General of Foreign Trade (DGFT) licence.\textsuperscript{162} Even, e-waste is often trade-in in the name of reuse or remanufacturing without any heed to the ecologically effective management of remanufacturing.

4.3.1.2. The Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008

In its Endeavour to frame appropriate law for e-waste, the Central Government drafted the Hazardous Material (Management, Handling and Transboundary Movement) Rules, 2007 to prohibit cross-border movement of perilous waste as envisioned by the Basel Convention, to which India is a signatory. On 24 September 2008, these Rules were notified as the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 by


\textsuperscript{162} The DGFT can grant licence for trade-in of perilous wastes [Rule 13 (5)] or refuse licence for perilous wastes prohibited for trade-in or trade-out [Rule 12 (7)]

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the Ministry of Environment and Forests in supersession of the Hazardous Wastes (Management and Handling) Rules, 1989 except in respect of things done or omitted to be done before such supersession.¹⁶³ Supersession rules include directions for appropriate management and handling of perilous wastes together with electrical and electronic wastes. As per these Rules, every person desirous of remanufacturing or reprocessing perilous waste together with electronics and electrical waste is required to register with the Central Pollution Control Board. The units handling e-waste are required to register with the CPCB.¹⁶⁴

The waste generated is required to be sent or sold to a registered or authorized recycler or reprocessor or re-user having ecologically effective services for resurgence of metals, plastics etc. The CPCB has to be satisfied that an applicant for remanufacturing on reprocessing waste is utilizing ecologically effective technologies. This must possess adequate technical capabilities, requisite services and tool to recycle, reprocess or reuse perilous wastes before granting registration to such applicants.

Under the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008, the Ministry of Environment and Forests is the nodal Ministry to deal with the cross-border movement of the perilous wastes and to grant permission for transit of the perilous wastes in the course of any part of India. It has placed trade-in of perilous waste items fewer than three categories i.e., compounds that can be trade-in with prior approval, free imports under Open General Licence and compounds which are prohibited for import in India. The first category includes metal and metal bearing wastes of antimony, lead, galvanic sludge and waste lead acid batteries whole or crushed. An importer is required to have a licence from the Directorate General of Foreign Trade. The list in the second category comprises resources such as iron, steel, zinc scrap, lead scrap

¹⁶³ http://www.indiaenvironmentportal.org.in (Visited on Feb. 25, 2014)
except lead acid batteries waste of copper and its alloys. The wastes listed in this category are traded under Open General Licence. The third category prohibits trade-in of waste containing mercury, beryllium, arsenic, selenium, thallium, hexavalent chromium compounds etc. as given in Schedule VI.

Furthermore, the Ministry of Environment and Forests has constituted a Coordination Committee to oversee the execution of the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008. The Committee consists of the representatives from the Ministry of Finance (Department of Revenue), Ministry of Commerce and Industry (DGFT), Ministry of Shipping, CPCB and selected State Pollution Control Boards and experts.

4.3.1.3. Guidelines for ESM (Ecologically Sound Management) of E-waste, 2008

Considering the growing concern on the issue of e-waste, the Government of India has supported several initiatives, predominantly the assessment conducted by the CPCB on the management and handling of e-waste which led to the preparation and the publication of the Guidelines for Ecologically Sound Management of E-waste in March 2008. The Guidelines have been formulated with the objective of providing broad guidance for identification of various sources of e-waste and approach and methodology for handling and clearance of e-waste in an ecologically effective manner. These Guidelines include details such as e-waste composition and recycle impending of items of financial value, identification of possible perilous contents in e-waste, recycle, reuse and resurgence options, handling and clearance options and the ecologically effective e-waste handling technologies.

The Guidelines also emphasize the concept of Extended Producer Responsibility (EPR), a concept on which the western nations base their clearance practices. The EPR is an environment protection strategy that makes the manufacturer liable for the entire life cycle of the artifact, predominantly for take-back, recycle and final clearance of the artifact. Thus, the manufacturer’s liability
is extended to the post-end-user phase of the artifact life-cycle. The Guidelines state that inclusion of the EPR in the legislative framework would make it a mandatory activity associated with the production of electronic and electrical objects over a period of time.

Such a move would also oblige the manufacturer to set up assortment centers for e-waste either individually or jointly. The CPCB has insisted on putting the burden of enforcement on the State Pollution Control Boards (SPCBs). The State Department of Environment or the SPCB may prescribe extra stringent norms as deemed necessary. Apart from publishing the Guidelines on various aspects of the perilous waste management, the Ministry of Environment and Forests has also provided financial assistance for strengthening the SPCBs for facilitating execution of the Rules. Financial assistance has also been provided for setting up Common Treatment, Storage and Clearance Facilities for perilous wastes management. In addition, the Ministry and the CPCB from time to time sponsor training programmes for creation of awareness regarding the provisions laid down in the Rules.165

4.3.1.4. The E-waste (Management and Handling) Rules, 2011

Considering it necessary in the public interest to enable the resurgence or reuse of useful material from e-waste, thereby reducing the perilous wastes destined for clearance, and to make sure the ecologically effective management of all types of waste electrical and electronic tool, the Government introduced the draft E-waste (Management and Handling) Rules, 2010.166 After inviting objections or suggestions from the stakeholders, the Ministry of Environment & Forests has finalized the draft modified e-waste (Management and Handling), Rules 2010 in September 2010 and put it on their website. These Rules have come

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into force with effect from 1 January 2012 and implemented in the course of the State Governments or State Pollution Control Boards. Meanwhile the Department related Parliamentary Standing Committee on Industry functioning under the jurisdiction of the Chairman, Rajya Sabha, has exclusively taken up the subject of electronic wastes and Medium, Small and Micro Enterprises (MSMEs).

It has heard the Secretary, MSME on the draft rules in its Meeting held on 20 December 2010. It was felt by the Committee that the views of the MSME on the aforementioned rules are important as hefty numbers of medium enterprises are involved in the management and remanufacturing of e-waste. The committee envisaged all recommendations from MSME in its report and submitted. Finally, we got the much awaited specific law on e-waste in India so as to control e-waste problem and to provide for its disposal.

4.3.1.4.1. Responsibilities of various stake-holders

According to the e-waste rules 2011, the rules shall apply to every manufacturer, dealer, assortment centre, refurbisher, dismantler, recycler, auctioneer, end-user or bulk end-user involved in the manufacture, sale and purchase and processing of electrical and electronic objects or elements. The responsibilities of the various stakeholders have also been laid down in the Rules. This makes these Rules unique is the application of the singular concept of the Extended Producer’s Responsibility. These rules have broadened the scope of its applicability by including each and every stakeholder from manufacturing to disposal of e-waste.

Like other countries, Extended Producer’s Responsibility (EPR) was envisaged in e-waste rules in India. According to the Rules, the manufacturers of electrical and electronic tools together with hefty and small household equipments, computers, toys, leisure and sports tools and medical devices shall be liable for collecting any e-waste generated during manufacture and will have to channelize the same for remanufacturing or clearance. They will set up assortment
centers for e-waste generated from the ‘end-of-life’ goods in line with the principle of the ‘Extended Producer Responsibility’ and make sure that such e-waste is channelized to a registered refurbisher or dismantler or recycler. They have to make sure that all electrical and electronic objects are provided with a unique serial number or individual identification code for artifact tracking in the e-waste management system. They shall also finance and organize a system to meet the outlay involved in the ecologically effective management of e-waste generated from the ‘end-of-life’ of its own goods and ‘historical waste’\textsuperscript{167} available on the date from which the rules come into force. The manufacturers will also have to facilitate contact details of dealers and authorized assortment centers to end-users so as to facilitate return of e-waste.\textsuperscript{168}

Dealers have to make provision for collecting e-waste by providing the end-user a box, bin or a demarcated area to deposit e-waste and make sure the same is transported back safely to the manufacturer or the authorized assortment centre. The dealer, refurbisher, dismantler and recycler have to get registered with the SPCB or CPCB, whichever may apply and make sure that the storage, transport, dismantling and refurbishing of e-waste does not cause any adverse effect on health or environment. All the stakeholders have to register with the concerned SPCB or Pollution Control Committee (PCC) and maintain records of the e-waste handled and also file annual returns in Form 3 to the concerned SPCB or PCC.

The e-waste rules, 2011 have also clearly acknowledged the responsibilities of the end-users and bulk end-users. They have to make sure that e-waste is deposited with the dealers or authorized assortment centers. They may also avail the pick up or take-back services provided by the manufacturers. As per these Rules, any person operating an assortment centre, individually or collectively, is required to obtain authorization from the SPCB or PCC concerned.

\textsuperscript{167} According to the “E-waste (Management and Handling) Rules, 2011”, “historical waste” means all available e-waste in the market on the date from which these Rules come into force.

\textsuperscript{168} Ibid.
To make sure e-waste management in an ecologically effective manner, they have to make certain that the storage system is secure and that the transportation to the manufacturer, refurbisher or to the registered recycler is safe.

Furthermore, the Rules, for the first time in India, bring in the concept of Extended Producer Responsibility, making manufacturers liable for safe clearance of electronic goods.\textsuperscript{169} It requires manufacturers to take-back the goods after their life is exhausted. It also aims to promote environment friendly designs in the making of electronic goods that limit the use of perilous chemicals similar to lead and mercury. Manufacturers will not only be made liable for setting up assortment centers to oversee the method. Even they have to also make sure that the perilous goods are handled by registered dismantlers or remanufacturers only in order to control any possible damage to the environment and human health. The guiding principle would imply that bulk clients similar to banks, MNCs and other big companies would have to deposit their e-waste at authorized assortment centers instead of selling them to local wholesale scrap shops. They would also have to file annual returns on the extent of the e-waste disposed.

Notable among other rules is the inclusion of the Chapter on ‘Reduction in the use of Hazardous Substances (RoHS)’ in the manufacture of Electrical and Electronic Equipment. Under rule 15, every manufacturer of electrical and electronic object will have to make sure that, latest electrical and electronic object does not contain Lead, Mercury, Cadmium, Hexavalent Chromium, Polybrominated Biphenyls (PBB) or Polybrominated Diphenyl Ethers (PBDE). Such reduction in use of perilous compounds would be achieved inside a period of three years from the date of commencement of the latest e-waste rules. The rule also provides for detailed information on the constituents of the objects in the artifact information booklet. Further, imports or placement in the market for electrical and electronic objects would only be permitted for those which are

\textsuperscript{169} “The e-waste industry in India: CSE exposes what lies beneath”, \textit{Press Release} (May 18, 2010)
RoHS compliant. Further, manufacturers have been made liable for making arrangement of assortment of e-waste generated from their end-of-life goods.

4.3.1.4.2. Criticism of the e-waste rules, 2011

Even, the Rules on e-waste management framed by the Government have been criticized on several grounds by various ecological groups. First and foremost, it ignores the unorganized and small and medium sectors where 90 percent of the e-waste is generated. The law currently does not facilitate for any plan to rehabilitate those involved in informal remanufacturing. The Electronics Industry Association of India (ELCINA) with the support of the Department of Scientific and Industrial Research (DSIR), Ministry of Science & Technology, studied the status and impending of e-waste management in India in February 2009. Their findings proved that a symbiotic relationship between the formal and the informal segment was crucial. It said:

“The informal segment’s role in assortment, segregation and dismantling of e-waste needs to be nurtured to complement the formal remanufacturers as supply chain partners. They should take on the higher know-how remanufacturing methods.”

The assortment and segregation and dismantling of e-waste is not perilous and the methods are efficiently carried out by the informal segment because mainly the e-waste can be refurbished and sold as second hand. The extraction of expensive metals is the perilous method, which should be left for the formal segment.

Secondly, the Rules also do not detail the industry model for assortment of e-waste from end-users. The legislations enacted by the Government cover generation, storage, transportation and clearance of perilous waste except do not

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propose a streamlined assortment mechanism. Never the less, other nations on e-waste have sought the participation and involvement of manufacturers as they are best equipped to address the solutions to the complex composition of such goods.\textsuperscript{171}

The e-waste rules, 2011 facilitate for setting up of assortment centers, individually or jointly or a registered society or a designated agency or a company or an association to collect e-waste. This provision can be used by informal segment. As per the liability of the manufacturer, they need to set up assortment centers and organize a system to meet the outlay involved for assortment of their end-of-life goods in an ecologically effective manner. The manufacturers may adopt diverse industry models for execution of Extended Producers Responsibility (EPR).

Thirdly, the Rules also do not recognize the magnitude of cross-border movement of e-waste under diverse categories, for instance, under the pretext of metal scraps and used electrical equipments.

Fourthly, as per the Ministry of MSME, the MSME segment is mainly affected as manufacturer under the latest e-waste rules, imposing various responsibilities on the manufacturers (MSMEs) in regard to assortment, clearance and remanufacturing of e-waste. It has held that as per the Fourth All India Census of MSMEs (2006-07), there are regarding 1,11,754 units engaged in IT, Telecom equipment, household equipments, end-user and lighting objects, monitoring and control items in India. Out of which only 27, 415 are registered units and 84, 339 are unregistered units. The normal gross output of the registered MSME units ranges from 8 million to 10 million rupees per annum per unit. It is acknowledged that an ecologically effective remanufacturing unit may involve heavy investment because of the know-how involved and will be economically viable only when there is adequate turnover of e-waste processing. Consequently, considering the low extent of operation and location aspect of manufacturers and

\textsuperscript{171} P. Srisudha, “Tackling e-waste”, \textit{The Hindu} (Jun. 28, 2009)
users, it may not be economically viable and physically feasible for each and every manufacturer (MSME) to establish an e-waste remanufacturing unit either individually or collectively, nor will it be feasible for them to set up assortment centers individually or collectively.

The Ministry of MSME is of the view that the liability of the manufacturers (MSMEs) should be restricted to:

- Remanufacturing of e-waste generated during manufacturing of electronic goods, in the course of authorized remanufacturers, and
- Providing information to the end-users regarding authorized e-waste remanufacturers at the time of sale of such goods in the form of booklets or brochures.

Fifthly, in the e-waste rules, landfill remains a form of clearance. The rules define ‘Clearance’ as any operation that includes physiochemical or biological handling, incineration and deposition in secured landfill. The rules state that every dismantler shall make sure that non-recyclable or non-recoverable elements are sent to authorize handling storage and clearance services. It will also be the liability of every recycler or reprocessor to make sure that the facility and remanufacturing methods are in accordance with the standards laid down in the guidelines published by the CPCB from time to time and to make sure that residue generated thereof is disposed off in a perilous waste handling storage clearance facility. In this regard, the CPCB’s Guidelines for Ecologically Sound management of E-waste, 2008 in its ‘guidelines for establishment of integrated e-waste remanufacturing & handling facility’ state that plastic, which cannot be recycled and is perilous in nature and that is why, this is recommended to be land filled in nearby Treatment, Storage and Clearance Facility (TSDF).

The MoEF has commented that flame retardants in plastics can be disposed off in the course of incineration or in the course of co-processing in a cement plant. Even, clearance of such plastics in landfill should not be
encouraged. Besides, in any case, lead resurgence is low; they can be temporarily stored at e-waste dismantling facility and later disposed in TSDF.  

4.3.1.4.3. Changes effected in the E-Waste rules, 2011 by the Ministry of Environment and Forests

As mentioned earlier, the Department of Parliamentary Standing Committee on Industry took up the issue of rules concerning E-Waste for discussion in its meeting on 20 December 2010 and it later advised the Ministry of Environment and Forests not to notify the rules till the Committee conveyed the concerns of Micro, Small and Medium Enterprises to the Ministry of Environment and Forests. Following the intervention of the Committee, the Minister of Environment and Forests discussed the E-Waste rules with the Secretary, MSME and a decision was taken that micro and small enterprises, as defined in the MSMED Act 2006, would be exempted from E-Waste rules. Even it was agreed that the exemption would be subject to a study to examine quantum of E-Waste generated and management of E-Waste from micro and small enterprises. The exemption would continue until the study in this regard comes to completion. It is understood that the Ministry of Medium, Small and Micro Enterprises would commission such a study and the time taken for this purpose would be six months.

4.3.1.5. Government assistance for Treatment, Storage and Clearance Facilities (TSDFs)

The Government has taken a number of initiatives to address issues related to clearance of wastes. It encourages setting up of integrated Treatment, Storage and Clearance Facility (TSDFs) for perilous waste management on Public Private

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Partnership (PPP) mode in clusters of perilous waste generating industries. So far 28 TSDFs have been set up. The Ministry of Urban Development is implementing the JNNURM\textsuperscript{174} for providing assistance to the State Governments or Urban Local Bodies for various projects together with solid waste management.

On the basis of proposals received from the States, the Centre has provided financial assistance to the State Pollution Control Boards for setting up of integrated TSDFs. The financial assistance disbursed from 2007 to 2010 is as follows:

Table XI- Financial assistance disbursed from 2007 to 2010 on e-waste management in India

<table>
<thead>
<tr>
<th>Year</th>
<th>State</th>
<th>Amount (in million rupees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-2008</td>
<td>Tamil Nadu</td>
<td>8.12</td>
</tr>
<tr>
<td>2007-2008</td>
<td>Andhra Pradesh</td>
<td>8.63</td>
</tr>
<tr>
<td>2007-2008</td>
<td>Maharashtra</td>
<td>9.66</td>
</tr>
<tr>
<td>2008-2009</td>
<td>Maharashtra</td>
<td>16.30</td>
</tr>
<tr>
<td>2009-2010</td>
<td>Maharashtra</td>
<td>24.56</td>
</tr>
<tr>
<td>2009-2010</td>
<td>Uttar Pradesh</td>
<td>8.22</td>
</tr>
<tr>
<td>2009-2010</td>
<td>Kerala</td>
<td>8.45</td>
</tr>
</tbody>
</table>

To offset any possibility of the amount allocated for setting up of the TSDFs getting diverted for other actions or projects. A Memorandum of Understanding (MoU) is signed between the Ministry of Environment and Forests, State Pollution Control Board and the entrepreneur before release of financial assistance for setting up of TSDF. One of the conditions of the MoU is to constitute a committee to monitor advancement of the facility. Further release

\textsuperscript{174} Jawaharlal Nehru National Urban Rural Mission

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of financial assistance is made only on submission of audited Utilization Certificate and physical advancement report by the respective State Pollution Control Board.

4.4. E-waste management projects in India

India has a hefty e-waste remanufacturing industry in and around the big cities, handling from collecting and dismantling to remanufacturing obsolete equipments and material resurgence. The entire industry develops in the informal segment, i.e. inside small units with low-skilled, mainly migrant labour. The foremost actions are concentrating on supporting the National WEEE Strategy Group. While the project’s execution unit focuses on the ‘Cyber City’ Bangalore.  

Flow Chart VI- Proposed e-waste channel in India

175 David Rochat, e-waste project coordinator, Swiss Global e-Waste Programme “Knowledge Partnerships in e-Waste Remanufacturing”
It supports the establishment of a ‘Clean e-Waste Channel’, starting with safe and controlled remanufacturing of corporate e-waste. Coupled to this initiative, an e-waste agency is established and alternative industry models are developed for the organization and safe participation of the informal segment. Important is the diversion of perilous fractions and methods to the formal industry.\textsuperscript{176}

4.4.1. Objectives of the project

E-waste management project objective in this context is to:

- Reduce the risks to the population and the pollution of the environment resulting from unsafe e-waste handling.
- Focus on knowledge transfer to and skills upgrade of all involved stakeholders in the course of trainings and seminars.
- Target mainly the existing informal remanufacturers allowing for their maximum except safe participation in future e-waste management by facilitating their evolution and integration in formal structures.

4.5. Role of judiciary in curbing menace of e-waste

After reading the following judgments delivered by various High Courts and hon’ble Supreme Court of India, it can be concluded that in absence of stringent guiding principle, it is not so difficult to dump e-waste in India. It also shows inefficiency of the legal provisions to control e-waste management in India. As a result of this India has become the prime destination to dump e-waste.

4.5.1. Import of used data graphics display Tubes

In \textit{Eastron enterprises inc. vs. Commissioner of customs}\textsuperscript{177}, Eastron Overseas Inc., Mataji Enterprises asked the Commissioner of Customs at ICD,

\textsuperscript{176} http://www.ewasteguide.info (Visited on Feb. 21, 2014)
\textsuperscript{177} W.P. (C) 721/2012 Delhi High Court
Tughlakabad, and New Delhi to permit and allow trade-in into India of the Data Graphic Display Tubes, which have been trade-in from Malaysia. It was claimed that these goods could be trade-in under the Open General License. The petitioner alleged that the respondent custom authority is delaying the release of the said consignment by taking the plea that the goods trade-in was old and used and consequently, they are ‘Electronic Waste’. The petitioners have put forward the plea and have submitted report of a chartered engineer in support. It was their contention that Data Graphic Display Tubes were not old tubes except were latest tubes and they were not refurbished and reconditioned. Thereby, it was directed by the court that it is open to the respondents to undertake necessary tests. In the reply filed by the respondents, they also acknowledged that as per the prevailing Import and Export Policy for the period 2009-2014, trade-in of used goods except capital goods are restricted and special trade in license is requisite for trade-in of used goods. Data Graphic Display Tubes are also covered by said restriction i.e. used data graphic display tubes require special trade-in license. Counsel for the respondents has further acknowledged that they have drawn samples and these have been sent to a testing laboratory for verification to decide whether or not the goods trade-in are latest or used. Respondents called up the petitioners to produce the manufacturing technical specification. The respondents submitted that they had obtained information from a chartered engineer, who has opined that the goods in question are old and used. Despite this High Court held that keeping in view the facts of the present case and the delay which has already occurred, it was directed that the respondent authority would pass an order to release the goods to petitioner inside a period of three weeks.

4.5.2. Used digital multifunction print and copying Machines

In M/s. Anand Impex vs. The Commissioner of Customs178, the petitioners trade-in the used Digital Multifunction Print and Copying Machines,

178 W.P. (c) 21732/2011 Madras High Court
of various models, from their overseas suppliers. The Respondents argued that perilous waste can only be trade-in for remanufacturing, resurgence or re-use, in terms of Rule 13(2) of the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008\(^\text{179}\), subject to the compliance of the conditions stipulated in Rule 14 of the said Rules. Electronic Assemblies meant for re-use, as provided under Basel Entry No. B-1110 (3rd sub-entry) can only be trade-in with the permission of the Ministry of Environment and Forests. As per Rule 17(1)(i) of the said Rules, the imports made without the permission of the Central Government shall be treated as unlawful traffic and the importer shall be directed to re-trade-out the waste in question, at his outlay, inside a period of ninety days from the date of its arrival in India, as per sub-rule 2 of Rule 17 of the Rules.

The learned counsels appearing on behalf of the petitioners submitted that the goods trade-in by the petitioners, namely, old and used Digital Multifunction Print and Copying Machines cannot be termed as ‘Waste’ or as ‘Perilous Waste’, as alleged by the customs authorities concerned. These were used capital goods. From the Inspection Report submitted by the Inspectorate Griffith India Pvt. Ltd., it was clear that the goods of the petitioners cannot be classified as ‘Perilous Waste’, as they had been found to be functional for a period of nearly five years. Further, they cannot be classified as Electrical and Electronic Assemblies under

\(^{179}\) The expression “Hazardous wastes” is defined under Rule 3(1) of the Hazardous Wastes (Management, Handling and Transboundary Movement )Rules 2008, as follows: “Hazardous waste” means any waste which by reason of any of its physical, chemical, reactive, noxious, flammable, explosive or corrosive characteristics causes danger or in likely to cause danger to health or environment, whether alone or when in contact with other wastes or compounds , and shall include- (i) waste specified under column (3) of Schedule I (ii) wastes having constituents specified in Schedule II, if their concentration is equal to or extra than the limit indicated in the said Schedule, and (iii) wastes specified in Part A or Part B of the Schedule III in respect of trade-in or trade-out of such wastes in accordance with rules 12, 13 and 14 or the wastes other than those specified in Part A or Part B if they possess any of the perilous characteristics specified in Part C of that Schedule.
Basel Entry B-1110\textsuperscript{180} and Schedule III (Part-B) of the Hazardous Waste (Management Handling and Transboundary Rules), 2008 due to their residual life.

Madras High Court opined its view that the used Digital Multifunction Print and Copying Machines, trade-in by the petitioners cannot be said to fall under the category of ‘Perilous Waste’, as per Rule 3(1)(iii) of the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008, read with Basel Entry B-1110 of part B of schedule III to the said Rules, 2008. The learned judge held that:

“\textit{There is no precise mention regarding the multifunction devices in the EXIM and consequently, the trade-in of multifunction devices need to be placed in the same category, as photocopying machines. In fact, it had been decided, in the said meeting, to request the Directorate General of Foreign Trade to include multifunction devices in the restricted list, so that the Ministry of Environment and Forests could consider the applications for trade-in of such devices, in the light of the conditions provided in the Basel Convention Technical Guidelines on ‘Transboundary Movements of Electronic and Electrical Waste’, after getting the necessary opinion from the Expert Committee. Thus, it is clear that the Digital Multifunction Print and Copying Machines are not in the restricted category, at present.}”\textsuperscript{181}

\textsuperscript{180} Entry B-1110
B1110 Electrical and electronic assemblies:- Electronic assemblies consisting only of metal or alloys –Waste electrical and electronic assemblies scrap (together with printed circuit boards) not containing elements such as accumulators and other batteries included on list A, mercury - switches, glass from cathode-ray tubes and other activated glass and PCB-capacitors or not 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 II to the extent of concentration limits specified therein -Electrical and electronic assemblies (together with printed circuit boards, electronic elements and wires) destined for direct reuse and not for remanufacturing or final clearance. W.A.No. 2122 OF 2010

\textsuperscript{181} From the Minutes of the twenty fourth meeting of the Technical Review Committee, held at New Delhi (Nov. 16, 2011)
4.5.3. Used computer parts are not electronic waste in India

In *M/s. Deccan Enterprises vs. Commissioner of Customs*\(^\text{182}\), the petitioner trade-in a consignment of used computer parts in the course of the Cochin Port. According to the petitioner, even if the goods were used goods, there was substantial residual life left in them. This has a market in India. But the respondent refused to allow the petitioner to clear the goods on the ground that the trade-in goods comprised of perilous electronic waste.

The matter was taken in appeal before the Commissioner of Customs (Appeals) and the Commissioner of Customs (Appeals) allowed the appeal to redeem the goods for home utilization on payment of redemption fine of 1,00,000 rupees and penalty of 50,000 rupees. The grievance of the petitioner in this writ petition was that despite the appellate order, the respondent was not permitting clearance of the goods, even if the petitioner was willing to pay the redemption fine and penalty.

According to the petitioner, in respect of similar goods, the Central Excise and Service Tax Appellate Tribunal has already held that such goods cannot be considered as perilous waste, relying on which only, the appellate authority has passed the order. Consequently, according to the petitioner, the respondent was not justified in refusing to release the goods as per the appellate order.

The Respondents contented that against the appellate order, the respondent had already approached the Tribunal with an appeal and consequently, the goods cannot be released until the appeal is disposed off by the Supreme Court of India. Justice S. Srijagan said:

“It is settled law that filing of an appeal does not operate as a stay. The respondent has not been able to produce before me any stay order staying the appellate order directing release of the goods on payment of redemption fine and penalty. I am of opinion that it is no ground to refuse the relief to the petitioner in accordance with the appellate order obtained

\(^{182}\) W.P. (C) 20628/2011 Kerala High Court
by him in so far as there is no order staying the appellate order yet. In the above circumstances, this writ petition is disposed off with a direction to the respondent to implement the order and release the goods trade-in. Subject to the orders in the appeal acknowledged to have been filed by the respondent. This shall be done within two weeks from today.”

4.5.4. Used photocopy machines

In M/s. Vinay auto copier machine vs. Union of India\(^{183}\), the petitioners trade-in used Digital Multifunction Printing and Copying Machines and used Photocopier Machines and its accessories, parts and consumables. They are also having Code Numbers allotted under the Importer and Exporter Code issued by the respective offices of the Zonal Joint Director General of Foreign Trade. They had also trade-in from various overseas suppliers in U.S.A., Finland, Germany, Italy and Sweden. The machines were sought to be trade-in in the course of Chennai Customs. It was acknowledged that the Customs Officers with the assistance of the approved Chartered Engineer were directed to examine the goods. The respondent did not permit the clearance of the goods in the normal course, except invariably subjected the goods to first check causing 100 percent examination with the assistance of the locally approved Chartered Engineer under the pretext that the goods are being procured from the dealer and not from the manufacturer. The authorities insisted on the petitioners and other importers to produce licence for their imports claiming that the machine is similar to a photocopier. The hon’ble court directed the department to release the goods on payment of the duties of customs on the enhanced value as determined by the Chartered Engineer and upon deposit of 25 percent of the enhanced value with liberty to the Customs to proceed in accordance with law by following the decision of the division bench of this court.

\(^{183}\) W.P. (C) 18188/2011 Madras High Court
Similar judgment was delivered in *Sristhi Digital Solution vs. The addl. Commissioner of Customs*\(^{184}\), by hon’ble Allahabad high court. It was held that in view of the findings recorded by the court, the penalty imposed by the custom department is unsustainable in law and the common impugned order under challenge was set aside. The respondent was directed to release the goods trade-in forthwith.

In another leading case *M/s/ Shivam International vs. Union of India*\(^{185}\), Kerala High Court also affirmed the above judgment. J. Chelameswar said:

“In the circumstances narrated, we are of the opinion that the directions given in the order under appeal by way of an interim relief are not to be granted normally, as interim relief sought for is substantially same as the main relief sought for in the Writ Petition. Even if, considering the competing claims of the parties to the litigation i.e., the rights of the respondent and obligation of the State to enforce the provisions of the Environment (Protection) Act, 1986, we deem it appropriate to dispose off the Writ Petition itself directing the respondents/appellants to pass a final order after such examination of the trade-in resources as they deem fit and appropriate in the circumstances, after giving a reasonable opportunity to the respondent regarding the permissibility or otherwise of clearance of the trade-in resources for home”.

In a leading case *M/s. Twenty first century printers vs. Collector of customs*\(^{186}\), regarding used printing machines was also decided in favour of the importer and it was held that used printing machines are not e-waste. J. Jyoti Balasundaram opined that:

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\(^{184}\) W.P. (C) 1439/2013 Madras High Court
\(^{185}\) W.P. (C) 34102/2010 Kerala High Court
\(^{186}\) 2003 (162) ELT 1045
“In view of the foremost opinion the item trade-in is a composite machine classifiable under the notification by Customs authority\textsuperscript{187}. The goods were covered by OGL\textsuperscript{188}. There was no cause for confiscation of goods and imposition of penalty. As such the impugned order is set aside”.

4.5.5. Difference between scrap and e-waste

In another leading case M/s. Oen ltd. Vs. Collector of central excise\textsuperscript{189}, Justice A.C.C. Unni said:

“We have considered the contentions of both sides. We observe that there is no dispute as to the essential facts of the case. The question needing decision is as to whether the pieces of silver strips remaining after they had been punched for purposes of making rotor blades, clips etc. for the electronic instruments manufactured by the appellants could be considered as scrap. Scrap is normally understood in common parlance as waste having less or no intrinsic value. We find that in the instant case the remnants of silver strips which is the disputed item, has only lost its original shape because of punching and thereby lost its shape as a strip. The remaining portions of the silver strip after punching have not lost their purity. It still retains the same purity as the original silver strips before punching. When such strips are sent back for re-melting and re-rolling for converting them into silver strip again, they do not lose their intrinsic worth as pieces of silver and become scrap. We consequently find that the appellant’s contentions have force. Thereby scrap cannot be considered as waste.”

\textsuperscript{187} The central excise and salt & additional duties of excise (amendment) act, 1980
\textsuperscript{188} Open General Licence is a type of trade out licence issued by a government to its domestic suppliers. In mainly nations, they are the licences with minimal restrictions. This is to be contrasted with other licences such as the Open General Trade Control Licence in the UK which put restrictions on the amount or type of goods or services being exported.
\textsuperscript{189} 2004 (173) ELT 53 Tri Bang
4.6. National Green Tribunal in India

The National Green Tribunal has been established on 18 October 2010 under the National Green Tribunal Act, 2010 for effective and expeditious clearance of cases relating to ecological protection and conservation of forests and other natural resources together with enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto. It is a specialized body equipped with the necessary expertise to handle ecological disputes involving multi-disciplinary issues. The Tribunal shall not be bound by the procedure laid down under the Code of Civil Procedure, 1908, except shall be guided by principles of natural justice. The Tribunal's dedicated jurisdiction in ecological matters shall facilitate speedy ecological justice and help reduce the burden of litigation in the higher courts. The Tribunal is mandated to make and endeavour for clearance of applications or appeals finally within six months of filing of the same. Initially, the NGT is proposed to be set up at five places of sittings and will follow circuit procedure for making itself further accessible. New Delhi is the principle place of sitting of the Tribunal and Bhopal, Pune, Kolkata and Chennai shall be the other four place of sitting of the Tribunal.

So far, few instances concerning problem of e-waste predominantly has been reported to National Green Tribunal, because, e-waste is a pollutant, which pollutes the soil, air and water in addition to other detrimental effluents similar to carbon elements, alcohols, acids and other metallic and non-metallic compounds. So e-waste causes health hazards to humans and ecological living beings as a combined result with other pollutants. Even if, it is almost impossible to distinguish that whether a person who takes water from a river, if, suffers from cancer is a result of e-waste or any other pollutant. Still, e-waste is polluting the environment along with other pollutants. Many research studies have confirmed the presence of e-waste components in plants and living beings, because of contamination of e-waste components in soil, water and air. A number of cases
have been brought in front of many courts predominantly with regard to damage caused by e-waste alone.

With respect to people working in e-waste remanufacturing industry or in contact with e-waste, they are also empowered to approach National Green Tribunal (NGT) in case of any health hazard caused by e-waste. NGT has the jurisdiction to decide the case and empowered to pass orders regarding amount of compensation on case to case basis.

4.6.1. Origin of National Green Tribunal

During the Rio-De-Janeiro summit of United Nations Conference on Environment and Development in June 1992, India vowed the participating states to facilitate judicial and administrative remedies for the victims of the pollutants and other ecological damage. There lie various reasons behind the setting up of this tribunal. After India's move with Carbon credits, such tribunal may play a vital role in ensuring the control of emissions and maintaining the desired stages. This is the first body of its kind that is established by its parent statute to apply the ‘polluter pays’ principle and the principle of sustainable development. NGT can rightly be called ‘special’ because India is the third nation following Australia and New Zealand to have such a system.

4.6.2. Members of National Green Tribunal

The sanctioned strength of the tribunal is currently 10 expert members and 10 judicial members even if the act allows for up to 20 of each. The Chairman of the tribunal, who is the administrative head of the Tribunal, also serves as a judicial member. Every bench of the tribunal must consist of at least one expert member and one judicial member. The Chairman of the tribunal must be a serving or retired Chief Justice of a High Court or a judge of the Supreme Court of India. Members are chosen by a selection committee (headed by a sitting judge of the Supreme Court of India) that reviews their applications and conducts interviews.
The Judicial members are chosen from applicants who are serving or retired judges of High Courts. Expert members are chosen from applicants who are either serving or retired bureaucrats not below the rank of an Additional Secretary to the Government of India (not below the rank of Principal Secretary if serving under a state government) with a minimum administrative experience of five years in dealing with ecological matters. Or, the expert members must have a doctorate in a related field.  

4.6.3. Jurisdiction of National Green Tribunal

The Tribunal has Original Jurisdiction on matters of “substantial question relating to environment”, i.e. a society at large is affected, damage to public health at broader level and “damage to environment due to precise activity”, such as pollution. Even, there is no precise method is defined in Law for determining “substantial” damage to environment, property or public health. There is restricted access to an individual only if damage to environment is substantial. The powers of tribunal related to an award are equivalent to civil court and tribunal may transmit any order to the respective civil court having local jurisdiction. The Act specifies that an application for dispute related to environment can be filed within six months only when first time dispute arose. Even tribunal can accept application after 60 days if it is satisfied that appellant was prevented by sufficient cause from filing the application.

Tribunal is also competent to hear cases for several acts such as Forest (Conservation) Act, Biological Diversity Act, Environment (Protection) Act, Water & Air (Prevention & control of Pollution) Acts etc. Tribunal also has appellate jurisdiction related to above acts after establishment of Tribunal provided that appeal must be filed within a period of 30 days of award or order received by aggrieved party. The Act says that decision taken by foremost of members shall be binding and every order of Tribunal shall be final. Any person
aggrieved by an award, decision or order of the Tribunal, may appeal to the Supreme Court within 90 days of commencement of award. Even Supreme Court can entertain appeal even after 90 days if appellant satisfies Supreme Court by giving sufficient reasons. Thus, in furtherance of above provisions, it can be concluded that NGT is also empowered to hear cases relating to hazards caused by e-waste in India.

4.6.4. Notable orders by National Green Tribunal

Since establishment of NGT, in few years, this institution has examined several applications and appeals regarding environment pollution and deliberately opined its verdict. NGT has directed the executive government in India many times to take desired action and implement effective policy to control environment pollution and protect the society. Some of the appraised orders of NGT are cited below.

4.6.4.1. Yamuna Conservation Zone

On 25 April 2014, The NGT said that the health of Yamuna will be affected by the proposed recreational services on the river. The NGT also recommended the Government to declare a 52 km stretch of the Yamuna in Delhi and Uttar Pradesh as a conservation zone.

4.6.4.2. Coal Blocks in Chhattisgarh Forests

The National Green Tribunal has cancelled the clearance given by the then Union Environment and Forests Minister, Jairam Ramesh, to the Parsa-East and Kante-Basan captive coal blocks in the Hasdeo-Arand forests of Chhattisgarh, overruling the statutory Forest Advisory Committee. The forest clearance was given by Mr. Ramesh in June 2011, overriding the advice of the Ministry’s expert panel on the two blocks for mining by a joint venture between Adani and Rajasthan Rajya Vidyut Utpadan Nigam Limited. The blocks requiring 1,989
hectares of forest land fell in an area that the government had initially barred as it was considered a patch of valuable forest and demarcated as a ‘no-go’ area.

The order is bound to have a superfluous impact, with the tribunal holding that:

“Mere expression of fanciful reasons relating to ecological concerns without any basis, scientific study or past experience would not render the advice of FAC, a body of experts, inconsequential. Under the Forest Conservation Act, 1980, the FAC is required to appraise projects that require forest lands and advise the Environment Ministry to grant approval or reject the proposals”.

But in this case, the NGT noted that the Minister had taken all of one day and relied upon his “understanding and belief” without any “basis either in any authoritative study or experience in the relevant fields.” The Minister, while clearing the coal blocks, had given six reasons for doing so, together with that the coal blocks are coupled to super-vital thermal power plant, which is imperative to sustain the momentum generated in the XI Plan for increasing power production. These ‘anthropocentric’ considerations, the NGT held, were not valid to evaluate the project.

4.6.5. Role of National Green Tribunal in curbing menace of e-waste

In a recent case Nagrik Upbhokta Margdarshak Manch & Anr. v. State of MP & Ors.\textsuperscript{191}, A Coram of Hon’ble Mr. Justice U.D. Salvi (Judicial Member) with Hon’ble Mr. P.S. Rao (Expert member) at the NGT, Central Zonal Bench, Bhopal held that The Respondent No. 3 (MPPCB) filed a reply supported by an

\textsuperscript{191} Order of the National Green Tribunal (Central Zonal Bench, Bhopal) on Apr. 7, 2014
affidavit dated 3 July 2014 to place on record the action taken by it pursuant to the directions dated 5 May 2014. It appears that the State Pollution Control Board has prepared a list of 19 foremost companies dealing with electrical and electronic objects and whose projects are distributed throughout the State of Madhya Pradesh, and issued directions to them under Section 5 of the Environment (Protection) Act, 1986 in compliance of the provisions of the E-Waste Rules, 2011 to facilitate the details of the Assortment Centers or take-back the E-waste in the State of Madhya Pradesh, details of registered dismantlers or remanufacturers and furnish a compliance report of E-Waste Rules, 2011.

List of dealers/utilization/sale of the goods in the State of Madhya Pradesh has also been called for from the respective companies carrying on the industry in electronic goods in the State of Madhya Pradesh.

It further appears that only three Respondents namely M/s HCL Info System Ltd., M/s LG Electronics India Pvt. Ltd and M/s Samsung India Electronics Pvt. Ltd. have responded to the directions issued by the Board and, consequently, the reminder letters have been issued to the remaining companies. Only two applications for establishment of remanufacturing units in Indore and Gwalior respectively and one application for establishing dismantling unit in Bhopal have been received for consideration.

Inviting attention to the guidelines issued by the Ministry of Environment & Forest for execution of E-Waste Rules, 2011, learned counsel for the Respondent No. 3/State Pollution Control Board submitted that manufacturers are required to achieve 100 percent assortment and channelization at the end-of-life of the equipment and for the purposes of monitoring the execution the targets based on the life of the artifact, type of the artifact, usage and utilization patterns and with relevant factors need to be fixed by the CPCB vide 4.0(3) of the guidelines for execution of E-Waste Rules, 2011.

CPCB consequently, pleaded as Respondent No. 9 to the present Original Application. Amended memo of parties was filed. Learned counsel for the CPCB,
accepted the notice and thus notice is waived on behalf of CPCB. Learned counsel for the CPCB responded to the present application giving details of the action it proposes to take in view of their role in the management of e-waste. Counsel appearing on behalf of the State of Rajasthan, State of Madhya Pradesh, Rajasthan Pollution Control Board, and Chhattisgarh Environment Conservation Board sought time to place before the Tribunal, the actions which have been taken in respect of the management of e-waste in their respective states.


The National Green Tribunal has also sought response from the Centre on a plea alleging rampant violation of E-waste management rules notified in 2011. A bench headed by Justice U.D. Salvi issued notices to the Ministry of Environment and Forests (MoEF), Delhi Pollution Control Committee (DPCC). The Tribunal was hearing a plea by NGO Toxics Link which claimed that tonnes of used goods are being dumped in India, leading to a pile-up of e-waste.

The NGO has sought direction to the Directorate General of Foreign Trade (DGFT) to submit a report on the exact quantities of goods being dumped in the India under the Export Import Policy of India (2013-2014).

Quoting a 2011 Rajya Sabha report, which said that India had been a destination for industrial wastes, the plea has also sought information on how these used goods were being recycled and whether this was being done in an eco-friendly manner. Electronic waste is redundant electrical or electronic devices which includes redundant computers, office electronic objects, entertainment device electronics, mobile phones, television sets and refrigerators among others.

E-waste Rules, 2011 apply to every manufacturer, end-user or bulk end-user involved in the manufacture, sale, and purchase and processing of electrical and electronic objects or elements. In this case, Toxics Link vs. Union of India &
A Coram together with Hon’ble Justice Mr. U. D. SALVI, (Judicial member), Hon’ble Mr. B.S. Sajwan, (Expert Member), Hon’ble Mr. Ranjan Chatterjee (Expert Member) of NGT, Principal Bench, New Delhi, issued notices to Ministry of environment, forests and climate change (MoEFCC), State Pollution Control Boards, together with Delhi Pollution Control Committee and DGFT on a plea alleging rampant violation of E-waste management rules notified in 2011 by NGO Toxics Link and ordered that, Service is complete as has been effected by Dasti in the course of the Residence Commissioners of the Respective States. Yet, none appears on behalf of the Respondents Nos. 5, 6, 9, 16, 17, 18, 22, 25, 28 and 29 and their presence before the Tribunal is necessary to elicit their responses to the Application moved for appropriate directions to check nationwide menace of E-waste. The Tribunal consequently, issued bailable warrants in the sum of Rs.10,000/- to the satisfaction of the Arresting Officer against the Member Secretaries of the respective States Pollution Control Board i.e. Respondent Nos. 5, 6, 9, 16, 17, 18, 22, 25, 28 in exercise of its powers and in terms of the provision of Section 19 (4) (a) of the National Green Tribunal Act, 2010 read with Order XVI Rule 10(3) and Section 151 of Code of Civil Procedure, 1908.

The Counsel appearing for the Respondent No. 2(CPCB), 32 and 7 filed their Replies. Replies took on record. Copies of the Replies furnished to the Learned Counsel appearing for the Applicant. Other Respondents sought time for filing their Replies.

Grievance was made on behalf of the few Respondents that they have not received the copy of the Application and annexure thereto. Thereby NGT has asked the Central Govt. to file the reply and respond towards the steps taken by the govt. in respect of compliance of e-waste rules, 2011.

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192 Order of NGT on Oct. 13, 2014