LEGISLATION ON 'RIGHT TO REPAIR': AN IMPERATIVE FOR E-WASTE MANAGEMENT IN INDIA

Puneet Chander Joshi, Ph.D. Research Scholar, Amity Law School, Amity University, Haryana

Dr. Ajay Kumar, Professor, Amity Law School, Amity Law School, Amity University, Haryana

ABSTRACT

With the rising use of electronic equipment in daily life, the subsequent e-waste is also on the rise. Reportedly, India has become 3rd highest producer of e-waste across globe. Main concern is that as per recent data from Central Pollution Control Board, India recycled only 32.9% of e-waste generated in 2021-22. Such report shows that humans are creating and using too much stuff and if they keep on treading the same path without introspection, then ultimately earth will be engulfed by mountains of trash someday. Problems due to exponential rise of e-waste is becoming so tremendous that it cannot be solved at individual level, instead collective measures need to be discovered and an inclusive approach need to be adopted. In addition to other measures, mass consumerism needs to be checked by discouraging planned obsolescence adopted by original equipment manufacturers and a framework on right to repair must be implemented to empower consumers to get the product repaired with ease and at reasonable cost. Also, people need to be sensitized about opting for recyclable and long-lasting electronic products. This article/paper attempts to analyze the benefits of legislation on "Right to repair" for management of exponential rise of e-waste in India.

Keywords: Consumer protection; Environment hazard; E-waste; E-waste management; Obsolescence; Right to repair.

I. INTRODUCTION

No doubt, the life has become easier with the advent of technology as the technology has penetrated in every sphere of life, be it home, or kitchen, or sports, or education, or entertainment or communication and many more. As it is said that every good thing has a bad side, it is also true for the technology as well. With the rising use of electronic equipment in daily life, the subsequent e-waste is also on the rise. Reportedly, India has become 3rd highest producer of e-waste across globe after China and America. It shows that humans are creating and using too much stuff and if they keep on treading the same path without introspection, then ultimately earth will be engulfed by mountains of trash someday. Such situation was also depicted in a futuristic Sci-fi movie titled "Wall-E" released in June, 2008. Another aspect of this problem is that these electronic items contain heavy metals like Lead (Pb) and Cadmium (Cd) in their Printed Circuit Boards (PCBs), plastic and glass etc. because of which they are required to be recycled by some specific scientific methods instead of typical conventional/primitive methods (like collecting, dismantling, burning or digging the unused parts in soil or tossing it in a landfill etc.) in which non-electronic items (food, scrap, clothes, furniture etc.) are generally disposed of by the users. In reality, most people are unaware of the scientific techniques which are required to be used to dispose of such electronic wastes.

The other problem is that such electronic products are generally non-repairable or if repairable, then their reparability cost is too high as the same are solely repaired by the authorized service centres of the company. Moreover, instead of repairing the faulty part, the service centres opt for replacing the same. So, the only option for majority of users is that in case an electronic product gets broken down or become faulty, they discard it and buy a new one instead of getting the same fixed as the cost of repairing it from service centres is quite high. Hugh Jeffreys, a youtuber and a dedicated right to repair advocate, who recently conducted a detailed and complex study of tiny screws, bits and pieces that make up iPhone 14 Pro Max, found that the phone needs a lot of improvement as far as scope of repair is concerned. According to him, Apple has programmed its software to reject certain parts like cameras, batteries, displays etc. that were not installed by Apple. According to him, despite company's claims regarding support for consumer's right to repair, its Pro model still retains the architectural inaccessibility and resists replacement parts.[1] This practice leads to increase in electronic waste on a very rapid

[1] Bharat Sharma, "The Difficulty of Repairing iPhone 14 Pro Max: A YouTuber's Painful Experience" *India Times,* March 27, 2023, *available at:* https://www.indiatimes.com/technology/news/difficulty-of-repairing-iphone-14-pro-max-youtubers-experience-597192.html (Visited on June 25, 2024)

pace. According to a recent survey report (2020-2021) of Indian Cellular and Electronics Association and Accenture, approx. 20.6 crores electronic devices including laptops and phones are lying discarded with people at home and are not being properly disposed of.[2]

II. E-WASTE: DEFINITION, ITS IMPACT ON ENVIRONMENT & RELATED LAWS

E-waste refers to discarded electrical or electronic devices which are put to non-use because of its fault in hardware and/or outdated software version.

E-Waste (Management) Rules, 2016 define e-waste as "any electrical and electronic equipment, whole or in part discarded as waste by the consumer or bulk consumer as well as rejects from manufacturing, refurbishment and repair processes".[3]

Waste Electrical and Electronic Equipment (WEEE) is defined under the Basel Convention[4] as "electrical or electronic equipment that is waste, including all components, sub-assemblies and consumables that are part of the equipment at the time the equipment becomes waste. E-waste is one of the fastest growing waste streams in the world."[5]

United Nations Environment Program (UNEP) defines 'E-waste' as "Any material from electronic devices and systems, generated as a waste stream in a processing operation or discarded after service."[6]

E-waste is not biodegradable and hence, accumulates in the environment i.e., in soil, air, water and living organisms. E-waste contains valuable materials (like gold (Au), silver (Ag), and palladium (Pd)), as well as hazardous toxic chemicals (like cadmium (Cd), arsenic (As), lead (Pb), mercury (Hg), chromium (Cr)), because of which safe recycling of e-waste becomes extremely important for economic value as well as environmental and human health. Recycling rates globally are low. Even in the European Union, which leads the world in e-waste recycling, just 35% of e-waste is officially reported as properly collected and recycled. Globally, the average is 20%; the remaining 80% is undocumented, with much ending up buried under the

[2] Surajeet Das Gupta, "206 mn Obsolete Devices Lying with Households", *Business Standard*, September 2, 2023.
[3] Electronic waste (management) Rules, 2016, s. 3(1)(r)
[4] The Basel Convention regulates the transboundary movements of hazardous wastes and other wastes and obliges its Parties to ensure that such wastes are managed and disposed of in an environmentally sound manner.
[5]https://www.basel.int/Implementation/Ewaste/Overview/tabid/4063/Default.aspx (Visited on August 2, 2023)
[6]"Electronic waste: Definition" *available at* https://leap.unep.org/knowledge/glossary/electronic-waste (Visited on July 21, 2024)

ground for centuries as landfill.[7] Conventional methods like open air burning and acid baths which are used to extract precious materials from discarded electronic equipment release toxic materials leaching into the environment. Because of such methods workers are exposed to harsh and harmful chemicals like lead, mercury, cadmium, arsenic etc. which results into various health issues like cancer, neurological and reproductive disorders etc. and also other harmful effects on various body parts like lungs, skin, brain.

Moreover, the manufacturing of electronic products leave behind the carbon footprints thereby contribute to global warming. In the fiscal year 2021-2022, India has reportedly generated around 1.6 million tonnes of e-waste, out of which only 0.5 million tonnes were collected and processed as per rules and regulations. India ranks as the third largest producer of electronic waste across the globe.

Laws on E-waste management

The policy, planning, promotion and coordination of environmental programs (covering electronic wastes also) are managed by the Ministry of Environment and Forests (MoEF), Government of India.

Management of electronic waste is directly or indirectly covered by various legislations and rules. The Environment (Protection) Act, 1986 (hereinafter called EPA) is an umbrella legislation and E-waste (Management) Rules amended from time to time are product of the EPA only.

Provisions of EPA provides that contravention of the provisions of this Act, or the rules made or orders or directions issued thereunder, shall be punishable with imprisonment for a term which may extend to 5 years or with fine upto one lakh rupees or both. In case of failure, additional fine of Rs.5000/- per day can be imposed.[8]

Similar penal provisions dealing indirectly with electronic wastes are also provided in Air (Prevention and Control of Pollution) Act, 1981 (hereinafter called Air Act) and the Water (Prevention and Control of Pollution) Act, 1974 (hereinafter called Water Act). The Air Act

[7]"The growing environmental risks of e-waste", January 16, 2023, *available at:* https://www.genevaenvironmentnetwork.org/resources/updates/the-growing-environmental-risks-of-e-waste/ (Visited on July 22, 2024)
[8] The Environment (Protection) Act, 1986, s. 15(1)

provides for an imprisonment for a term not less than 1 year and 6 months but may extend upto 6 years and with fine.[9] The Water Act provides for an imprisonment of term which may extend to 3 months or with fine upto Rs.10,000/- only.[10]

To manage the increasing burden of e-waste, the Government of India has recently introduced, E-waste Management Rules, 2022 (came into effect on April 1, 2023), the main aim of which is to promote environmentally sound e-waste management practices. Main features of these rules are[11]: -

1. These rules apply to "every manufacturer, producer, refurbisher, dismantler and recycler involved in manufacture, sale, transfer, purchase, refurbishing, dismantling, recycling and processing of e-waste or electrical and electronic equipment listed in Schedule 1".

2. These rules cover 100 types of equipment divided in 7 broad categories in Schedule 1, known as "Covered items". Newly added equipment includes tablets, GPS, modems, electronic storage devices, solar photovoltaic panels/cells, air-purifiers, sports equipment, medical devices, laboratory instruments etc.

3. These rules require all regulated persons i.e., manufacturers, producers, refurbishers, recyclers to register on "Central Pollution Control Board" i.e., CPCB's online portal. Without such registration, they are not entitled to operate and also registered entities are restrained from undergoing any dealing with unregistered entities. Also, the "Bulk Consumers" (i.e., any entity which has used at least 1000 units of electrical/electronic equipment in particular financial year and includes retailer) are required to handover e-waste to registered producer, refurbisher or recycler.

4. These new rules are expected to provide actual and real time data/figures on e-waste generated which in turn will help the government to formulate effective policies/regulations to manage e-waste.

[9] The Air (Prevention and Control of Pollution) Act, 1981, s. 37 (1)
[10] The Water (Prevention and Control of Pollution) Act, 1974, s. 41 (1)
[11] Press Release, Press Information Bureau Government of India, "Re-cycling of e-waste", December 8, 2022, available at: https://pib.gov.in/PressReleasePage.aspx?PRID=1881761(Visited on July 15, 2024)

III. RIGHT TO REPAIR: A TOOL TO CURB THE FORCED PURCHASE OF NEW ELECTRONIC GOODS

Right to repair refers to the concept that end users, business users as well as consumers, of technical, electronic or automotive devices should be allowed to freely repair these products.[12] Four requirements which are of particular importance for such right to repair are as follows[13]:

1. That the device should be constructed and designed in a manner allowing repairs to be made easily;

2. That the end users and independent repair providers should be able to access original spare parts and necessary tools (software as well as physical tools) at fair market conditions;

3. That the repairs should, by design, be possible and not be hindered by software programming; and

4. That the repairability of a device should be clearly communicated by the manufacturer.

The goals of the right to repair are to favor repair instead of replacement, and make such repairs more affordable leading to a more sustainable economy and reduction in electronic waste.[14]

Planned obsolescence is a policy of planning or designing a product with an artificially limited useful life or a purposely frail design, so that it becomes obsolete after a certain pre-determined period of time upon which it decrementally functions or suddenly ceases to function, or might be perceived as unfashionable.[15] The phrase 'Planned obsolescence' was popularized by Brooks Stevens in 1954 who defined it as "Instilling in the buyer the desire to own something a little newer, a little better, a little sooner than is necessary."[16] The concept and culture of planned obsolescence emerged in 1950s. Electronic manufacturers started using this practice by artificially reducing the life cycle of their products. As a result of which consumers were

[12] https://en.wikipedia.org/wiki/Right_to_repair#cite_note-2 (Visited on July 12, 2024)
[13] *Ibid.*
[14] Chen, Brian X, "Why You Should Care About Your Right to Repair Gadgets", *The New York Times* (July 14, 2021), *available at*: https://www.nytimes.com/2021/07/14/technology/personaltech/right-to-repair-iphones-android.html (Visited on July 25, 2024)
[15] Bulow, Jeremy, "An Economic Theory of Planned Obsolescence" 101(4) *The Quarterly Journal of Economics* 729–749, (November 1986), available at: https://idv.sinica.edu.tw/kongpin/teaching/io/bulow2.pdf (Visited on July 31, 2024)
[16] https://en.wikipedia.org/wiki/Planned_obsolescence#cite_note-11 (Visited on July 15, 2024)

encouraged rather forced to buy new products after a couple of years. This actually affected the environment in a very negative way. Consumers were left at the mercy of manufacturers as the necessary tools, spare parts and information necessary to repair electronic products were not made available to them.

This ultimately leads to "Right to Repair" movement for the benefit of the consumers by enabling them to get their electronic/electrical products repaired as per their own wishes. The sole motive behind this movement was to push the companies to make spare parts, tools and repair-information available to customers and repair shops, to increase the life span of products so as to use them upto its fullest life time.

According to a survey by Re-commerce Market Place Cashify, in 2022, over 52% of consumers have two or more unused/old devices at their home. Recently, as per a survey carried out jointly by Indian Cellular and Electronics Association and leading IT company Accenture, it was found that around 206 million broken and damaged electronic devices (mobile phones/laptops/other electronic devices) are kept unused in Indian homes.[17] Such unused and defective products can be brought to life by refurbishing and can be used by low-income group people across the country. But the same can be achieved only if the spare parts are made available in the market by the manufacturer for a reasonable period of time.

As per recent data from Central Pollution Control Board (CPCB), India recycled only 32.9% of e-waste generated in 2021-2022.[18] According to United Nations Global E-waste Monitor, 2020, out of 53.6 million metric tonnes of e-waste generated across the globe in 2019, only 17.4% was collected and recycled. This report pointed out that this huge pile of electronic waste has been a result of higher consumption rate of electronic/electrical equipment, their short life cycles and few options for repair. The report also emphasized that e-waste containing toxic and hazardous substances also pose a great risk to health and environment, if not managed properly on the basis of environmentally sound methods of disposal.

These days the manufacturers through their authorized dealers offer a "Buy back scheme" wherein they offer to take back the old model and give the consumer a new model of that gadget at a discounted price. Such deals, though are profitable for manufacturer but are totally unfair

[17] *Supra note 2*
[18] Press Release, Press Information Bureau Government of India, "E-waste Management", July 20, 2023, available at: https://pib.gov.in/PressReleasePage.aspx?PRID=1941054 (Visited on June 23, 2024)

to the consumer as they are required to shell out more money on a new model when they can get the old one repaired at a quite lesser cost, if the spare parts are made available in open market by the manufacturer, which owes a responsibility to ensure the availability of spare parts of their products during its lifetime or at least during a reasonable amount of period. Actually, availability of spare parts during the lifetime of a product and the repair guides to repair the products can help the consumer to use the product for more years i.e., to its fullest life time and thereby help to put a check on rapidly increasing mountain loads of electronic debris which is ruining the environment

IV. "RIGHT TO REPAIR" IN OTHER COUNTRIES

In order to curb the exponential rise of e-waste across the globe and in response to numerous movements demanding the right to repair, various countries have decided to implement such laws granting full or partial rights to repair.

European Union

In March 2023, European Union adopted the proposal on common rules promoting the repair of goods. Under these rules, manufacturers are bound to provide Repair & Maintenance information and spare parts to both repairers and end users for 7 years after the product is retired from the market. Manufacturers will also provide the software updates for at least 5 years after retiring a product from the market. In terms of reliability, smartphones will have to survive at least 45 accidental drops before losing functionality and retain at least 80% of a battery's capacity after 800 charging cycles.[19]

United States of America

In US, State of New York enacted a Digital Fair Repair Act, which amended the General Business Laws in relation to the sale of digital electronic equipment and providing diagnostic and repair information. Under this law, an original equipment manufacturer shall make available to any independent repair provider and owner of digital electronic equipment the information relating to any documentation, parts, and tools (software program or hardware implement or other apparatus) required for the diagnosis, maintenance, or repair of such digital

[19] Ugo Vallauri, "New EU rules for smartphones and tablets: Still far from a true Right to repair", November 25, 2022, *available at:* https://repair.eu/news/new-eu-rules-for-smartphones-and-tablets/ (Visited on July 18, 2024)

electronic equipment and parts for such equipment. And for equipment containing an electronic security lock, the original equipment manufacturer shall make available special documentation, tools, and parts needed to access and reset the lock or function when disabled in the course of diagnosis, maintenance, or repair of such equipment through appropriate secure release systems.

Australia

Though there is no such Right to Repair law in Australia but it follows a "Waste not Framework". There exists a chain of Repair Cafe across the country. Repair Cafe is a part of the movement that aims to reduce waste, overconsumption, and planned obsolescence. Here, skilled volunteers repair items brought in by the public at no cost. These cafes are typically held at community locations including churches, libraries, and college campuses where tools are available and device owners can get their broken goods fixed with the help of skilled volunteers.[20]

United Kingdom

As per the law in UK, it is mandatory on the part of manufacturers to provide spare parts to consumers for repair either by themselves or by any local repair shop of their choice.

V. CURRENT SCENARIO IN INDIA / NEED FOR COMPREHENSIVE LAW ON "RIGHT TO REPAIR" IN INDIA

The idea of LiFE (Lifestyle for Environment) was introduced by the Prime Minister Sh. Narendra Modi during the 26th United Nations Climate Change Conference of the Parties (COP26) in Glasgow in year 2021. This mission envisioned the replacement of "Use and Dispose" economy with a circular economy. The circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible. In this way, the life cycle of products is extended. This is a departure from the traditional, linear economic model, which is

[20] https://en.wikipedia.org/wiki/Repair_Caf%C3%A9 (Visited on June 12, 2024)

based on a take-make-consume-throw away pattern.[21]

With a growing population, rapid urbanization, climate change and environmental pollution, India must move towards a circular economy. The Government has been actively formulating policies and promoting projects to drive the country towards a circular economy.[22] Moreover, a joint report by the India Cellular & Electronics Association (ICEA) and Accenture, titled 'Pathways to Circular Economy in Indian Electronics Sector', has stated that there is a significant opportunity for generating $7 billion in revenue in the electronics sector in India by the year 2035 by adopting circular business models.[23]

Keeping this in mind, the Ministry of Consumer Affairs (MCA) has set up a committee under the chairmanship of Additional Secretary Nidhi Khare to formulate a comprehensive framework of Right to Repair with an aim to give consumers a chance to repair their products at an optimal cost instead of buying new products altogether or being dependent of manufacturers for repair. By allowing third party repairs via this legislation, a plenty of jobs will also be generated.[24] The sectors shortlisted for the initial focus of the framework are farming equipment, mobile phones & tablets, consumer durables, automobiles & automobile equipment.[25] An e-portal called "https://righttorepairindia.gov.in/" is being launched by Ministry of Consumer Affairs which intends to serve as a single platform to provide easy access to necessary information on repair and maintenance of products to consumers.

Through this portal, customers will be able to access a variety of services like repair and maintenance of products, replacement of parts, and information related to warranty of the product. Customers will be able to get their products serviced quickly. Consumers will also be able to check the genuineness of the components as the standards or hallmarking notified for the components will also be displayed through this portal.

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[21] "Circular Economy: Definition, importance and benefits" *News, European Parliament,* May 24, 2023, *available at:* https://www.europarl.europa.eu/news/en/headlines/economy/20151201STO05603/circular-economy-definition-importance-and-benefits (Visited on June 21, 2024)

[22] Press Release, Press Information Bureau Government of India, "Govt driving transition from linear to circular economy", March 18, 2021, *available at*: https://pib.gov.in/PressReleasePage.aspx?PRID=1705772 (Visited on July 21, 2024)

[23] "Old cellphones and laptops are not trash: You know how?" *Posts English*, September 12, 2023, *available at:* https://india.postsen.com/local/1049757.html (Visited on July 20, 2024)

[24] Press Release, Press Information Bureau Government of India, "Department of Consumer Affairs sets up committee to develop comprehensive framework on the Right to Repair", July 14, 2022, *available at*: https://pib.gov.in/PressReleasePage.aspx?PRID=1841403 (Visited on June 23, 2024)

[25] https://righttorepairindia.gov.in/ (Visited on July 20, 2024)

Currently, 29 companies have registered from the covered sectors. Some of these companies include Apple, Lenovo, Acer, Samsung, Honda, Hero, Boat, Havells, HP, LG Electronics, Xiaomi, and Panasonic among others.

The object of this framework is to benefit consumers by saving their money by arranging the means to get their products repaired at affordable costs and thereby supporting the objectives of a circular economy as well. It will be achieved by improving the lifespan of the products, their maintenance and reusability and by proper waste management of electrical and electronic appliances.

VI. CONCLUSION AND RECOMMENDATIONS

It is true that government has taken steps to frame laws on right to repair in India but people are also required to be made aware about these laws for its proper implementation. Government must sensitize people about benefits of recycling of e-waste. Merely enacting the laws granting right to repair will not be sufficient rather implementing them with utmost sincerity is the need of the hour. For that, political will is required as necessary infrastructure is required to be created across the country. Moreover, persuading the concerned companies to think on the same lines i.e., developing ingenious ways to reduce, reuse and recycle instead of their sole purpose of commercial benefit. Following are the recommendations which should be implemented to get the maximum benefit out of laws which are to be enacted in near future.

Firstly**,** government must take steps to promote and encourage the manufacturers to design electronic/electrical devices that are repairable, more durable, recyclable and by using lesser toxic materials. Manufacturers must be encouraged to introduce modular devices which enable consumers to upgrade parts of such devices instead of replacing it.

Secondly, new laws must be enacted and implemented which mandatorily requires manufacturers to provide consumers with convenient and free e-waste recycling. Companies must be made responsible for the disposal of electronic products at the end of their lives. After recycling the e-waste, it can be used into a resource for producing new products.

Thirdly, recycling must be made more convenient i.e., by establishing “Collection Units” in every district across the country where the discarded electronic/electrical gadgets can easily be deposited in lieu of its nominal value. Items collected therein can be responsibly refurbished

or recycled as per the condition of the product. Also, government can launch some Mobile App for collection of such old or discarded equipment so as to make it convenient for the consumers to submit the discarded products to government accredited recyclers which are certified by the government agencies to meet the cleanest and responsible standards for e-waste recycling.

Fourthly, government must take steps to sensitize the people about safe and responsible recycling of electronic devices. Government must encourage people to avail the services of certified/accredited recyclers by regularly providing the details of such entities on government websites, newspapers, advertisements on TV/social media and on billboards outside prominent places or government buildings.

Fifthly, the major obstacle to efficient and effective e-waste management is lack of investment by government and other agencies because of which the infrastructure, which is actually required to handle such enormous scale of e-waste, is still not in existence. Moreover, the lack of awareness among the majority of population is also one of the biggest reasons for irresponsible use and disposal of such electronic equipment. Hence, startups engaged in responsible e-waste disposal must be encouraged, promoted and funded. Companies must be encouraged to donate for e-waste management or to undertake such activities as a part of their CSR (Corporate Social Responsibility) initiatives.

Sixthly, government must also sensitize people to opt for recyclable or long-lasting electronic products. People must be promoted/encouraged to donate their unused electronic/electrical equipment to others who are in need. People must also be encouraged to use cloud data platforms instead of buying new storage devices unnecessarily. Knowledge regarding e-waste management must be imparted at school level as a part of their academic curriculum. People must be encouraged to get their discarded or unused devices at accredited recycling units as they follow best standards so as to prevent the environment pollution as well as they also undertake various steps so as to prevent the user's data from being compromised i.e., formal recycling centres generally wipe off the date stored on electronic devices before recycling it, ensuring that cyber criminals do not have access to such private information.

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