

A Qualitative Study of Law on the Management of Electronic Waste in India

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Abstract: Technological advancement has brought revolutionary changes to everyday human life. It has made life easy as compared to earlier times when even conveying a message to near and dear ones was a time-consuming process. But as it is well said every benefit carries with it a burden also so is the case with technological progress. The technological progress and consumer culture of the society have added a new kind of waste to the existing list in the form of electronic waste. It is one of the fastest-growing wastes. It is composed of different products having heterogeneous compositions like laptops, mixer-juicer phones, chargers, washing machines, etc. They are hazardous containing mercury, chlorofluorocarbons hydro chlorofluorocarbons, etc. Therefore, have become a cause of concern for their adverse impact on the environment, right to life, and right to a healthy environment of citizens all over the world. Every year a huge amount of electronic waste is generated within a country and traded inter-country legally as well as illegally. As per a United Nations Report of 2019 each year 50 million tons of electronic waste is thrown away. According, to the Global E-Waste Monitor by 2030 amount of electronic waste is estimated to grow by 74.7 metric tons. The Central Pollution Control Board in a report submitted to National Green Tribunal stated 1014961.2 tons of electronic waste as the amount generated during 2019-2020. Consumer culture, short life cycles, and fewer repair or recycling options are considered the main reasons for its growth. Electronic waste needs effective management as it relates to Sustainable Development Goals among others- decent work and economic growth; good health and well-being and clean waste and sanitation. Keeping these in mind, for effective and efficient management of electronic waste the government of India enacted the E-Waste Management Rules, 2016.

Keywords: *Extended Producer Responsibility, Authorizations, Certification, Take back, Deposit refund, Rules of 2022, Sustainable consumption.*

1. Introduction

The e-waste is a solid waste.¹ It is defined as discarded appliances that use electricity.² It is a consequence of inventions by humans in the form of electronic equipment. There is no single list of what should be considered electronic waste. What constitutes electronic waste varies from country to country. For instance, Japan identified

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¹ Solid Waste Management Rules 2016, s 3(36)

² Robinson BH, 'E-Waste: An Assessment of Global Production and Environmental Impacts' (*Science Direct*, 29 October 2009) <<https://www.sciencedirect.com/science/article/abs/pii/S0048969709009073>> accessed 23 April 2023

only four products as electronic wastes contra the items identified by the European Union. It has divided electronic waste into 6 categories:

1. Electronic items used for heating, cooling, or freezing purposes e.g., air conditioners, fridges, etc.
2. Screens and monitors like televisions, laptops, monitors, notebooks tablets, etc.
3. Small ICT devices like mobile phones, global positioning systems, routers, printers, telephones, and personal computers.
4. Large equipment e.g., washing machines, clothes dryers, dish-washing machines, electric stoves, large printing machines, copy equipment, and photovoltaic panels.
5. Small equipment e.g., vacuum cleaners, microwaves, ventilation equipment, toasters, electric kettles, electric shavers, scales, calculators, radio sets, video cameras, etc.
6. Fluorescent lamps.

1.1. The Extent of the Waste

Taking note of the consumerism of modern society along with everyday improvements in technology, it has been projected that 50 million tonnes of e-waste are produced each year around the world. If left unchecked this could more than double to 120 million tonnes by 2050.³ According to the report of the Global E-Waste Monitor 2017, it is the US, New Zealand, Japan, and other developing countries that contribute most to the e-waste generated. In India, 70% of the e-waste is generated by 10 States; out of this, 60% of the e-waste is generated by 65 cities. The 10 States generating the largest e-waste are Maharashtra followed by Tamil Nadu, Andhra Pradesh, Uttar Pradesh, West Bengal, Delhi, Karnataka, Gujarat, Madhya Pradesh, and Punjab. The major contributors to the e-waste are government, public, and private sectors accounting for 70% of the e-waste. 15% of the e-waste is contributed by the households and the rest is contributed by the manufacturers.⁴ It has been predicted that the e-waste from computers will rise by 500% in 2020 as compared to 2007 in India and the case of mobile, it will grow by 18% during this period.⁵ Such predictions highlight the exigency of the issue in developing countries like India most of the e-waste is managed by the informal sector which is yet to be regulated. India generated 2 million tons of e-waste in 2016 within its territory. It is being generated with a growth rate of 10% per annum. To this further addition is being made by India's export-import policy that allows the export of second-hand computers not more than 10 years old and as donations. This gives a leeway to the exporters to club the new computers with the old ones.⁶ Further, the Basel Convention adopted in 1989 that concerns the trade of hazardous substances has failed

³ Ryder G and Zhao H, 'The World's E-Waste Is a Huge Problem. It's Also a Golden Opportunity' (*World Economic Forum*, 24 January 2019) <<https://www.weforum.org/agenda/2019/01/how-a-circular-approach-can-turn-e-waste-into-a-golden-opportunity/>> accessed 23 April 2023

⁴ *Ibid*

⁵ *Ibid*

⁶ *Ibid*

to stop such import to developing countries. A huge amount of e-waste is being exported illegally to countries with weak environmental laws, rules, and regulations for instance China and India where it is recycled by people engaged in informal industry.⁷

Another important factor worth considering concerning the EPR is the making of producers responsible for increasing collection of the e-waste to 30% over three years (2017-2020) and increasing the collection to 70% of e-waste from 2023 onwards.⁸ However, information as to the percentage of target collection is not available in the public domain.⁹ Therefore, we cannot say to what extent the target set for collection of the e-waste has been achieved. Further, the studies conducted in Bangalore¹⁰ and Chandigarh¹¹ demonstrate that the Rules have proved ineffective in attaining its objectives and they emphasize that the consumer is an important stakeholder in the e-waste management. Further many studies have suggested that consumer awareness is an important factor for dealing with the e-waste issue. Therefore, it is necessary to understand the consumers' stand in the e-waste management scenario which includes the extent of consumer awareness about the E-waste Management Rules. Another factor worth consideration is the participation of the sellers of the electronic equipment in dealing with this issue. It is a significant factor because the E-Waste Management Rules, 2016 makes it the responsibility of the producer to create awareness among the consumers about the e-waste recycling facilities and the hazardous effects of such wastes on the environment and human health.

2. Constitutional Provisions and Judicial Approach

So far as the legislation related to the protection of the environment is concerned, Articles 47, 48A and 51A (g)¹² of the Constitution give directives to the State to work for the protection and improvement of the environment. Further, Article 47 indirectly directs the State to protect and improve the environment without which public health cannot be ensured whereas Article 48A adopts the protectionist as well as restorative policy¹³. In addition to these

⁷ Swerts T, 'The Democratic Deficit of Transnational Environmental Activism: A Case Study of E-Waste Governance in India' (2013) 13 *Global Networks*, 498

⁸ E-Waste Management (Amendment) Rules 2018

⁹ Guy Ryder and Houlin Zhao, 'The World's E-Waste Is a Huge Problem. It's Also a Golden Opportunity' (*World Economic Forum*, 24 January 2019) <<https://www.weforum.org/agenda/2019/01/how-a-circular-approach-can-turn-e-waste-into-a-golden-opportunity/>> accessed 23 April 2023

¹⁰ Anwasha Borthakur and Madhav Govind, 'Computer and Mobile Phone Waste in Urban India: An Analysis from the Perspectives of Public Perception, Consumption, and Disposal Behaviour' (2018) 62 *Journal of Environmental Planning and Management*, 717-740

¹¹ Khaiwal Ravindra and Suman Mor, 'E-Waste Generation and Management Practices in Chandigarh, India and Economic Evaluation for Sustainable Recycling' (2019) 221 *Journal of Cleaner Production*, 286-294

¹² Constitution of India 1950, art. 47, art. 48A and art. 51A (g)

¹³ G.P. Verma, "Human Right to Pollution- Free, Clean & Healthy Environment- Constitutional Perspectives" in (Bhavani Prasad Panda) (2017), *Human rights, Development and Environmental Law: An Anthropology*, 156-168

provisions, Article 21¹⁴ embraces the right of a citizen to live in a healthy and wholesome environment¹⁵. Taking note of these provisions, the Bombay High Court in *Vijay Laxmanrao Dak and Others v Union of India and Others*¹⁶ prohibited the respondents from disposing of waste in utter disregard to the Rules framed under the Environment Protection Act, 1986 for differential treatment of different wastes, the Water (Prevention and Control of Pollution) Act, 1974, and the Air (Prevention and Control of Pollution) Act, 1981.

Again, relying on the decision in the Municipal Council, Ratlam Municipality¹⁷ case the Supreme Court in *Dr. B.L. Wadehra v Union of India*¹⁸ directed the Municipal Corporation Delhi and the New Delhi Municipal Council to perform its statutory duties of scavenging and cleaning the city. The Supreme Court did not accept the grounds of inadequacy of funds or insufficiency of machinery for non-performance of their statutory obligations. Insanitation has been accepted as a slow poisoning adversely affecting the life of the citizen and inviting unnatural death.¹⁹

To fulfil its obligation under the United Nations Conference on the Human Environment, the parliament enacted the Environment Protection Act, of 1986 to prevent the degradation and protection of the environment. However, the Act nowhere specifically mentions waste management. It was in pursuance of its responsibility envisioned under Section 3(2) (vi) and (vii)²⁰ of the Act the central government in 2011 framed the E-Waste Management Rules which were subsequently replaced by Rules of 2016 (amended in 2018). These Rules have made e-waste management the responsibility of the producer, introducing the concept of the Extended Producer Liability (EPR). However past research on implementation of the EPR for waste management in developing countries has shown difficulties in its implementation. These difficulties are mainly on account of the large informal sector engaged in waste processing, illegal import of e-waste often from developed countries, and the weak regulatory capacity of the state. About 85 to 95 per cent of the e-waste is being recycled by the informal sector in India.²¹

3. Electronic Waste Management Rules-2016

Initially, Schedule IV of the Hazardous Waste (Management, Handling, & Transboundary Movement) Rules, 2008 dealt with the issue of e-waste management. Later on, the GOI framed e-waste management rules 2011 making it mandatory to register a recycling unit with CPCB. The CPCB issued Guidelines for environmentally sound

¹⁴ Constitution of India 1950, art. 21

¹⁵ *Subhash Chandra v State of Bihar* (1991) SC 420

¹⁶ *Vijay Laxmanrao Dak and Others v Union of India and Others* (2018) Public Interest Litigation No.33/2018

¹⁷ *Municipal Council, Ratlam v Shri Vardhichand & Ors* [1980] AIR 1622

¹⁸ *Dr. B.L. Wadehra v Union Of India & Ors* [1996] SC 2969

¹⁹ *L.K. Koolwal v State of Rajasthan and Ors.* [1986] 1 WLN 134

²⁰ E-Waste Management Rules 2016, s 3(2) (vi) and (vii)

²¹ Kalyan Bhaskar and Bipul Kumar, 'Electronic Waste Management and Sustainable Development Goals' (2019) 11 Journal of Indian Business Research, 120-137

management of e-waste in 2008 as a prelude to 2011 rules. These rules did not apply to micro and small enterprises and the batteries.²² However, these rules failed to perform because of a lack of effective implementation.²³

Till 2012, the responsibility of e-waste management was of the local bodies. In 2012 the ‘producers’ of electronic products were made responsible for the management of their discarded products introducing the concept of the ‘Extended Producer Liability’. Now producers are responsible for recycling e-waste. They could delegate the responsibility of dealing with end-of-life products to professional organizations known as PRO (Producer Responsibility Organizations). These rules were further modified in 2016 on 3 aspects:²⁴

1. The applicability rules of 2016 were extended to manufacturers; collection centers, dealers, e-tailers, refurbishes, and to the transfer, collection, and storage of the e-waste.
2. They set a mandatory collection target year-wise.
3. A penal provision is introduced. For non-compliance of the rules the license to sell the products could be revoked.

Here it is important to notice that though the rules are of wider application rule 2 does not talk about the ‘importer’ of electronic goods. But they are made applicable to ‘importer’ by the court interpreting the definition of the ‘producer.’ It was said that a company importing electronic goods for sale would be covered under the rules of 2016.²⁵

4. Waste Collection

As per Rules²⁶ waste collection is the responsibility of the manufacturer and the producers. The manufacturer has to collect waste generated during the manufacturing process and channel it. The producer has to follow the EPR principle. The EPR principle aims to make the producer liable for collection of the waste through ‘take back’ or ‘deposit refund’ schemes.

However, Indians consider waste as an ‘asset’ and seek some benefit in return for their discarded appliances even if the responsibility of collection; transportation, and recycling is assigned to the producer.²⁷ Even then the inclusion of producers in the ‘take back’ process is appreciated stating that it would encourage companies to make products that could be recycled and disassembled easily, causing less harm to environment and the humans.²⁸ The ‘deposit

²² Kalyan Bhaskar and Rama Mohana Rao Turaga, ‘India’s E-Waste Rules and Their Impact on E-Waste Management Practices: A Case Study’ (2017) 22 *Journal of Industrial Ecology*, 930-942

²³ Abhishek Kumar Awasthi and others, ‘E-Waste Management in India: A Mini-Review’ (2018) 36 *Waste Management & Research*, 408-414

²⁴ Kalyan Bhaskar and Bipul Kumar (n 22)

²⁵ *M/S.NL Technologies Pvt. Ltd. v Commissioner of Customs* (2019) Custom Appeal No. 1/2019

²⁶ E-Waste Management Rules 2016, s 4 and s 5

²⁷ Manmohit Singh, Maninder Kaur, and Siby John, ‘E-Waste: Challenges and Opportunities in India’ (*IEEE Xplore*, 15 October 2013) <<https://ieeexplore.ieee.org/document/6629902>> accessed 8 April 2023

²⁸ TS Perry, ‘Who Pays for E-Waste? [Electronic Waste Recycling]’ (2006) 43 *IEEE Spectrum* 14-15.

refund' scheme acts as an incentive for the consumer to deposit the discarded e-product. It has been found a way to finance waste management.²⁹

A study concluded that the 'take back' scheme can be more successful if it is accompanied by an 'exchange offers' scheme.³⁰ It would be more successful in respect of collecting household waste. However, it is also suggested that for the 'take back' scheme to become successful the producer should play the lead role and monitor the progress. There has to be transparency in working and ensure compliance with the rules.³¹ It is necessary because the e-waste management process flows downstream over the top of which is the producer and at the bottom lies the recyclers. In between positions are the collection centres and the dismantlers.³²

5. Formal Recycling

The objective of EPR is to formalize the process of e-waste management. However, the rules of 2016 do not take note of the omnipresent informal e-waste recycling sector. More than ninety percent of e-waste goes to informal recyclers.³³ Therefore, it is said that the EPR would fail unless the consumer is made aware of the harmful effects of informal recycling; some incentive is created to make them deposit their waste with formal recyclers and the deposition scheme is made easy.³⁴ However, this has also come to the fore that formal recyclers sell their collection to informal recyclers.³⁵ Therefore, the informal waste recyclers should be integrated with the formal sector after proper training in handling, dismantling, and recycling of the e-waste.³⁶ This will protect their right to livelihood.

The EPR is based on the 3Rs (Reduce, Reuse, and Recycle) approach. Reduce- will help bring down the amount or contain the waste making the producer modify its products. It will help reduce waste containing the use of virgin material in the manufacturing of a new product. Reuse aims to use a product giving it to someone who cannot afford to buy. It will help reduce the recycling burden of the local authorities. However, it is said that reusing and extending the life cycle is not the solution because one day that product will become waste for sure. Therefore, the producer should take responsibility for the whole of the life-cycle of the product.³⁷ And the main objective of the EPR should be the reduction of waste.³⁸

²⁹ Kalyan Bhaskar and Bipul Kumar (n 22)

³⁰ Anwasha Borthakur and Madhav Govind (n 11)

³¹ Ravi Agarwal, 'E-Waste Law: New Paradigm or Business as Usual?' (2012) 47 (25) Economic & Political Weekly <<https://www.epw.in/journal/2012/25/commentary/e-waste-law-new-paradigm-or-business-usual.html>> accessed 8 April 2023

³² *Ibid*

³³ Vikrant Wankhede, 'How E-Waste Crisis Continues to Plague Informal Sector' (*Down To Earth*, 30 June 2020) <<https://www.downtoearth.org.in/blog/waste/how-e-waste-crisis-continues-to-plague-informal-sector-72033>> accessed 9 April 2023

³⁴ Kalyan Bhaskar and Bipul Kumar (n 22)

³⁵ Rama Mohana R Turaga and et. al., 'E-Waste Management in India: Issues and Strategies' (2019) 44 *Vikalpa: The Journal for Decision Makers*, 127

³⁶ *Ibid*

³⁷ Jerald L Schnoor, 'Extended Producer Responsibility for E-Waste' (2012) 46 *Environmental Science & Technology*, 7927

³⁸ *Economic Aspects of Extended Producer Responsibility* (OECD Publishing 2004)

6. Authorization

As per rules, in 2016 a producer cannot sell his products unless he takes authorization from the central government. To get authorization the producer has to submit its EPR policy. This authorization aims to ensure the installation of a waste management infrastructure to recover the material used and again make it part of the production chain. Its indirect objective is to promote sustainable design for durable and harmless products.³⁹

Another thing worth consideration is that once authorization is granted there is no authority to see if the details submitted to get the authorization are correct or not. Further, the rules involve many authorities at the central as well as state level, creating administrative difficulty. Consequently, violation of rules goes unchecked.⁴⁰

6.1. Import of E-Waste

Rules of 2016 allow the import of e-waste from other countries. It is said that this will make India a dump yard for developed countries like the US.⁴¹

6.2. Consumer Awareness

The Rules make it the responsibility of producers to spread awareness among consumers about the hazardous effects of improper handling of the e-waste etc.⁴² But 5 years passed many studies have found a lack of awareness, among consumers, of the rules or harm they cause to the environment and human health.⁴³ Consumer awareness should also be the responsibility of the State and other stakeholders as well, and such campaigns be confined not to urban areas but spread to remote rural areas as well, and the schools and universities should also be made part of it.⁴⁴

The rules do talk about awareness campaigns by the producer. The producer has to submit his plan at the time of seeking EPR authorization. However, they do not talk about what strategies should be adopted. Some studies suggest the following strategies to create awareness among consumers:⁴⁵

1. The consumer should be told about this at the time of the purchase of a product. This will create a long-lasting impression in his mind.
2. Use of traditional media channels should be extensive.

³⁹ Ravi Agarwal (n 32)

⁴⁰ Rama Mohana R Turaga and et.al. (n 36)

⁴¹ Ravi Agarwal (n 32)

⁴² E-Waste Management Rules 2016, s 5(1)(f)

⁴³ Kalyan Bhaskar and Bipul Kumar (n 22)

⁴⁴ Ravi Agarwal (n 32)

⁴⁵ Phillip Olla and Joseph Toth, 'E-Waste Education Strategies: Teaching How to Reduce Reuse and Recycle for Sustainable Development' (2010) 9 (1) *Int. J. Environment and Sustainable Development*, 294-309; *See also* Rajiv Ganguly, 'E-Waste Management in India – An Overview' (2016) 9 (2) *International Journal of Earth Sciences and Engineering*, 574-588

3. Business houses and manufacturers should come forward to create awareness by adopting strategies like charging surcharges. This will make consumers think before throwing the product away.
4. Using the internet
5. Cooperation among governments at the global level.

Some studies are of the view that the law on e-waste management in India should be according to its own socio-economic and cultural environment. Citizens' education; income; availability of facilities, and awareness about the harmful effects of such waste and recycling are important factors that should not be ignored.⁴⁶ Being a sustainability issue these factors need to be considered in policy making along with environmental aspects.⁴⁷ The present legislation influences European countries. However, foreign experiences can be considered while framing policy on e-waste management.⁴⁸

7. New Rules of 2022

The GOI has come up with new rules of 2022 replacing rules of 2016 from 1st April 2023. This new legislation has expanded the definition of products to be covered under the rules. The rules set a higher target for the collection focusing on the concept of sustainable consumption and asking the producer to use such constituents in product making which could be easily recycled. Further, the rules have done away with PRO and dismantlers focusing more on authorized recycling which is said to be done by a handful of organizations in India. Now the producer has to provide information about product constituents only when asked by the CPCB. It has introduced the concept of Environmental Compensation to be imposed for violation of the legislation. It is being said that the rules will be able to deal more efficiently and effectively with e-waste. However, learning from the past violations of legislation, what can be concluded is that only time will tell, how effectively will work.

8. Suggestions

From the above discussion, it can be concluded that the e-waste management rules are compressive. However, what is needed is:

1. The informal sector should be integrated with the formal waste recycling sector;
2. As in India waste is considered wealth, therefore e-waste collection policy should contain a strategy encouraging waste disposal with formal waste recycling industry instead of informal waste recyclers;
3. Creating consumer awareness should not be the only responsibility of the producers but state governments, schools, and universities should come forward to do this;

⁴⁶ Anwasha Borthakur and Madhav Govind, 'Emerging Trends in Consumers' E-Waste Disposal Behavior and Awareness: A Worldwide Overview with Special Focus on India' (2017) 117 Resources, Conservation and Recycling, 102

⁴⁷ Kalyan Bhaskar and Bipul Kumar (n 22)

⁴⁸ Anwasha Borthakur and Madhav Govind (n 11)

4. More and more use of traditional media as well as various social media platforms should be done to create awareness among consumers;
5. There should be one authority to see if the rules are being followed properly or not. The involvement of many authorities creates a gap in administration affecting the implementation of the legislation;
6. Their authority should strictly check if the details submitted for authorization of EPR policy are implemented by the person or if they exist only on paper;
7. There is a need to check that the waste collected by formal recyclers does not go to the informal sector for recycling or disassembly; and
8. Last but not least the law should be made according to the socio-cultural conditions of the country.