सत्यमेव जयते

Government of Rajasthan

Draft

of

Rajasthan e-waste Management Policy

2022

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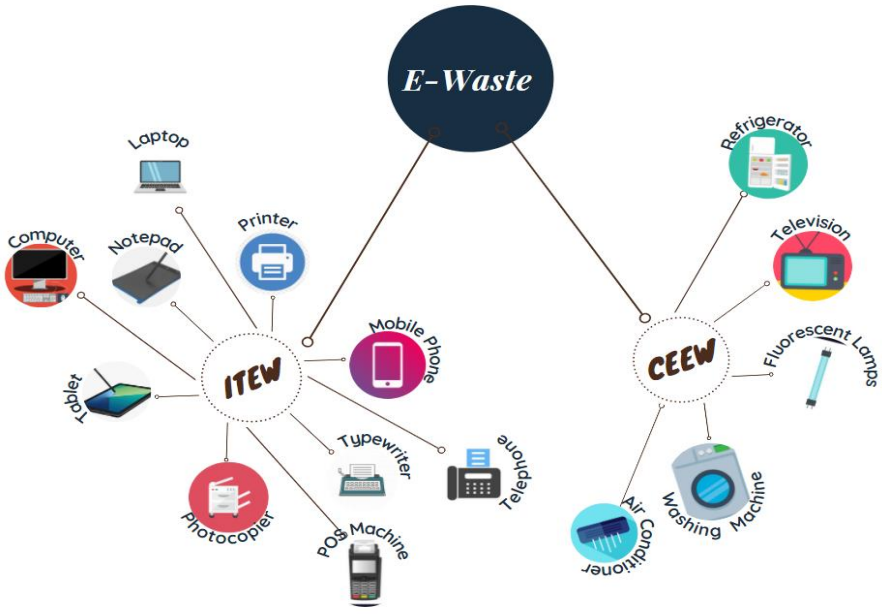
1. Introduction:

Electronic Waste (e-waste) means 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. It comprises of end-of-life information technology and telecommunication (IT & Telecoms) equipment such as centralized data processing, mainframes, minicomputers, personal computers, laptops, printers, use terminals, cellular phone etc. and end of life consumer electrical and electronics such as television sets, refrigerator, air conditioner, washing machine and fluorescent and other mercury containing lamps.

The equipment along with their EEE code are listed in the schedule – I of the e-waste Management Rules, 2016 and are given at Annexure-1. With the changing technological landscape, some of new e-waste streams which are going to pose challenges in future are lithium-ion batteries, LED lighting systems, photovoltaic cells etc.

e-waste contains useful materials of economic benefits such as plastics, iron, glass, aluminum, copper, precious metals (silver, gold, platinum, palladium and indium) and rare earth elements (lanthanum, neodymium), hazardous substances (lead, cadmium, mercury) and other toxic substances (polychlorinated bi-phenyls, etched chemicals). The most complex mix of substances is usually present in the printed circuit boards (PCBs).

Electrical and electronic equipment may be broadly classified in these two categories: -
(i) Information technology and Telecommunication Equipment **(ITEW)**
(ii) Consumer Electricals and Electronics Equipment's **(CEEE)**



Categories of electrical and electronic equipment

2. Impact on human health and environment

Waste of Electronic products includes a number of toxic substances. Many of these substances are harmful and carcinogenic for human health and also affects environment.

- Emissions from e-waste create environmental damage.
- Toxic chemicals from e-waste enter the soil food pathway.
- Those are non-biodegradable and cause soil pollution
- e-waste dumping yards and nearby places are polluted and cause health hazards.

The harmful elements in the compositions of electrical and electronic appliances that can be hazardous to health and environment are given at Annexure 2.

3. Life of Electronic and Electrical Equipment (EEE):

Life of various items and replacement depending upon the nature, usage, maintenance cost, obsolescence in terms of technology, up-gradation of technology, etc., the related items are classified in "Implementation Guidelines for e-waste Management, Rules, 2016. The average life of the EEE is available at Annexure-3.

4. Statutory Provisions:

1. e- waste (Management & Handling) Rules, 2011 were notified in 2011 and had come into force on 1st May, 2012.
2. In order to ensure effective implementation of e-waste Rules and to clearly delineate the role of producers in EPR, MoEF& CC, Government of India in supersession of e -waste (Management and Handling) Rules, 2011 has notified the e-waste Management Rules, 2016 vide G.S.R. 338(E) dated 23.03.2016 which is effective from October, 2016.

5. e-waste generation in the state:

Year			Total (In MTA)
2018-19	**2019-20**	**2020-21**	
8478.00	**17028.00**	**20816.00**	**46323.00**

6. Present Status of handling of e-waste:

1. Total 25 e-waste processing units are authorized by Rajasthan State Pollution Control Board so far, to handle/process the e-waste.
2. Manufacturer, Recycler, Dismantler and Refurbishers have to obtain the following permissions from Rajasthan State Pollution Control Board: -
   A. Consent to Establish and Consent to operate under Water & Air Acts.
   B. Authorization under e-waste (Management) Rules, 2016

C. Authorization under Hazardous & Other Waste (Management &Transboundary Movement) Rules, 2016.
D. Passbook for e-waste procurement and tracking.

7. Challenges in disposal of e-waste:

1. Issues ranging from generation to final disposal of e-waste including integration of the informal sector with formal e-waste recyclers.
2. The informal sector consists of a widespread network of collection agents, intermediates and scrap dealers/kabadiwalas which are well versed in the door-to-door collection of e-waste. However, their processing techniques are rudimentary e.g.- open and manual dismantling, shredding, burning, acid leaching and uncontrolled dumping of electronic/electrical devices. It can directly harm the exposed workers and the environment.
3. At present, most of the e-waste generated in the country is being collected and processed by the informal sector due to widespread network.
4. Despite these challenges, the informal sector is highly effective in collecting electrical and electronic goods due to its network-like structure, long-standing personal relationships and knowledge about local e-waste flows. On the other hand, the formal sector is using environmentally sound techniques of e-waste recycling and extracting precious metals i.e. Gold, Silver, Platinum and Palladium up to 95% efficiency. It helps to reduce dependence on natural resources i.e. mining activities and promotes the concept of circular economy.
5. e-waste from consumers/bulk consumers does not reach authorized e-waste dismantlers/recyclers.
6. Stakeholders of e-waste do not properly recycle the waste.

8. Vision Statement:

The policy will strive for scientific management of e-waste by maximizing the e-waste collection through various means, integration of informal sector with formal sector and to ensure that all the collected e-waste is processed and recycled through authorized dismantlers/recyclers having environmentally sound e-waste processing facilities to maximize the material recovery with minimum adverse impact on environment. The policy will promote repair and refurbishment of end-of-life e-waste articles so as to enhance material efficiency and bring circularity in e-waste management.

9. Policy objectives:

1) Enforcement of existing legislations for e-waste management
2) The effective implementation of e-waste Management Rules, 2016 to be combined with incentives for authorized recyclers and players working in the informal sector.
3) Integration of the informal sector with the formal sector
4) e-waste to be discarded in the general waste stream through aggregators /Kabadiwalas.

5) To increase community participation and citizen's awareness for effective e - waste management
6) Raising awareness among both consumers and e-waste recyclers and informal sector
7) Creating green jobs, maintain labour standards, and eliminate practices which are harmful to human health and the environment.
8) To encourage producers/ brand owners/ Producer Responsibility Organisations (PROs) for achieving the targets mentioned under Extended Producer Responsibility (EPR).
9) To focus on authorized channel for e-waste management, establishment of collection centers, mainstreaming the informal sector and providing proper safety to the e-waste workers.
10) To establish e-waste parks.

10. Actions to meet policy objectives:

A. Government organizations:

a. Rajasthan State Pollution Control Board:

1. As per the Rule 17 of e-waste Management Rules, 2016, State Pollution Control Board to inventorise the e-waste to assess e-waste generation from the households and bulk consumers.
2. Scientific inventory of e-waste generated, collected through formal and informal sectors and processes will be prepared.
3. Ensure sharing of information with all Government departments/ Boards/ Corporations regarding EEE procurement (item/quantity/year).
4. Ensure updation of inventory of bulk consumers in the State.
5. The RSPCB will publish guidelines for "Condemnation and disposal policy for e-waste" for government sector in consultation with DoIT & C Department and other Stakeholders**.** This policy will discourage the disposal of e-waste with other scrap items and concept of residual value/basic selling price.
6. To issue directions for handing over the e-waste in formal chain only, through authorized e-waste dismantler/ recycler/ producer/ PROs.
7. Ensure verification of the status of authorization and passbook at the time of handing over of the e-waste. (Form-6) for transportation.
8. An integrated recycling park will be set up at Jaipur, where recyclers of e-waste will be co-located along with recyclers of other wastes such as ELV, batteries, plastic, other hazardous waste etc. It will also have testing laboratories, market for refurbished goods, facilities for skill development of workers engaged in e-waste processing and awareness center and scope of e-waste collection from the informal sector such as Kabadiwalas, rag pickers etc.
9. RSPCB will launch GreenCo Rating system for e-waste processing units of the State.
10. The contact details of all authorized collection centres, recyclers, PROs etc. shall be prominently displayed on the website of Rajasthan State Pollution Control Board and ULBs. The area where, individual operate will also be displayed, so that consumers can easily contact them to hand over e-waste.
11. A Web Portal and Mobile Application will be launched to set up an online e-waste market place to which all authorized collection centers, recyclers, PROs etc. will be

linked. Any individual intending to give e-waste will be able to contact multiple stakeholders for getting best price of his e-waste and at the same time will hand over at his/her door step.

12. Producers and Manufacturers will be directed to impart training to their technicians regarding harmful effect of unauthorized recycling of e-waste and motivating to consumers to give e-waste to authorized agencies only.
13. Till web portal or mobile app is developed, it will be made mandatory for every e-waste recycler/dismantler to develop a mechanism to collect e-waste from the door step of consumers/bulk consumers by providing toll free numbers/mobile app/web portal etc. The e-waste recycler /dismantler will also collect e-waste from the RWAs located within the district, where e-waste facility is operational.
14. RSPCB will support mobile based e-waste collection platforms by providing funding under the Start-up policy of Rajasthan State Pollution Control Board.
15. To ensure adequate supply of e-waste to the dismantling/recycling units set up in the state and that the waste collected in the state is processed by the dismantlers/recyclers in the State. Appropriate guidelines will be framed by RSPCB after due consultation with all the concerned Stakeholders.
16. Circular economy and allow setting up of recycling facilities employing state-of-art technology for up-cycling of waste. A package may be given in addition to RIPS-2019, to the e-waste recycling units established in the park.
17. Steps may be taken to facilitate channelization of e-waste generated within the State to e-waste recycling park, including formulation of a policy to channelize the e-waste generated from government organisations, to the e-waste recycling park.
18. Audits of all the dismantlers/recyclers shall be taken up through third party to ensure that the recycling is as per the provisions of rules and guidelines.
19. Rajasthan State Pollution Control Board will institute annual awards for best three ULBs, Recyclers, Dismantlers, producers and Brand owners. A detailed scheme for awards will be framed by the State Board.
20. A State Action Plan will be prepared by RSPCB for e-waste management in the State.

b. Rajasthan State Industrial Development & Investment Corporation Ltd.:

1. Industry/Trade Associations will be motivated to run e-waste collection drives in association with authorized PROs/ local e-waste recyclers. Efforts will be made to publish a calendar of such drive in advance, so that people are ready with their e-waste, when the drive is launched.
2. To make specific provisions in "The Rajasthan Investment Promotion Scheme 2019 (RIPS-2019)" to provide benefits/ incentives/ subsidy to the, units established for recycling of e-waste in 'e-waste recycling park' and elsewhere in Rajasthan.
3. Every RIICO industrial area may designate a plot for e-waste disposal. Every Industry should have a proper disposal system with recycling of e-waste.
    - All the personals involved in the waste in industries must be properly trained and qualified.
    - Promotion may be given to create industrial products from biodegradable e-waste materials.
    - Fines to be imposed on industries not following e-waste management rules or Dump waste causing environmental hazard.

- Compound should be made of biodegradable material as far as possible.

c. Labour Department

a. Register workers involved in e-waste handling in informal sector on the portal of labor department.
b. Undertake industrial skill development activities for the workers involved in dismantling and recycling
c. Educated and made aware of hazards and ill effects of improper handling /processing of e-waste on health and environment.
d. To include workers involved in handling of e-waste for registration under **"e-shram"** portal of Ministry of Labour and Employment under a separate category/class.
e. Undertake annual monitoring and ensure safety and health of workers .

d. Urban Local Bodies:

1. In each ULB, a couple of plots will be identified and reserved for establishing collection centres for the e-waste by PROs/ Producers/ Dismantlers/ Recyclers.
2. Each ULB will develop some kind of mechanism, in association with Producers/PROs/Local recyclers for door-to-door collection of e-waste, which might be by fixing a day in a week for e-waste collection or through Web portal or Mobile Application or Toll-Free Number etc.
3. Training programs will be held through PROs and reputed institutions/experts for officials of Local Self Government/Municipal Bodies of Rajasthan, who are connected with door-to-door municipal waste collection network.

e. Department of Information Technology & Communication (DoIT & C):

1. Build Incentives for Design of Greener Electronics, and enhance science, research and technology Development
2. Establish multi-stakeholder groups to address key research questions and design challenges, and accelerate development of and investment in green electronics design standards.
3. Promote consumer purchasing of green electronics that are certified as meeting stringent environmental performance criteria that address environmental impacts across the entire lifecycle of the products
4. Promote scientific research and technological developments that improve our ability to recover and market valuable materials from used electronics, especially precious metals and rare earth elements
5. Launch electronics stewardship prize competitions to stimulate innovations in green product design, recycling solutions, and other phases of the electronics lifecycle.
6. Ensure expansion of quality green electronics certification programs, to consider environmental impacts across entire product lifecycles and to cover additional types of electronics.
7. Producers and Manufactures will be encouraged to bring good buy back/refund schemes for the end of the life electronic items so as to ensure collection and recycling of the waste through formal channels. The yearly awards of best

producers/brand owners may be announced by the State, on the basis of quantity of collection of e-waste by offering attractive schemes.

8. The contact details of all authorized collection centres, recyclers, PROs etc. shall be prominently displayed on the website of Rajasthan State Pollution Control Board and ULBs. The area where, individual operate will also be displayed, so that consumers can easily contact them to hand over e-waste.

f. Education Department

1. In schools/ colleges/Universities/Educational institutions, students will be educated about the ill effects of handling of e-waste by unauthorized sector which will also motivate their parents/guardians to hand over e-waste to authorized collection centres, recyclers, PROs only.
2. A chapter on e-waste may be incorporated in student's curriculum. PROs and institutions will be engaged to regularly deliver lectures in educational institution on e-waste.

g. Transport Department

1. Transportation of e-waste will be regulated as per the manifest mechanism laid down in the e-waste Management Rules, 2016. All such vehicles engaged in transportation of e-waste will be registered by RSPCB for which the State Board will frame registration procedure.
2. During routine checking, if Regional Transport Officer find any vehicle loaded with e-waste, they may seek Form VI as per the provisions of e-waste (Management) Rules,2016. In absence of Form VI, the entire e-waste shall be confiscated and auctioned to the authorized e-waste recycler/dismantler/PRO. After establishing, Rajasthan e-waste Recycling Park, such confiscated e-waste shall be handed over to authorized e-waste Recycling units located in the Park.

B. **Stakeholders:**

a. **Producers/Brand Owners/ Importers –**

1. To obtain Extended Producer Responsibility authorization from CPCB.
2. Deposit Refund System, etc. whether directly or through any authorized agency and channelizing the items so collected to authorized recyclers.
3. Collection and Channelization of e-waste generated from the 'end-of-life' of their products or 'end-of-life' products as per the targets prescribed in the Rules and amended time to time.

b. **Producer Responsibility Organization (PRO)** –

1. PRO means a professional organization authorized or financed collectively or individually by producers, which can take the responsibility for collection and channelize of e-waste generated from the 'end-of-life' of their products to ensure environmentally sound management of such e-waste;

c. **Collection centers –**

1. To collect e-waste on behalf of producer or dismantler or recycler or re-furbisher including those arising from orphaned products.

2. Collect e-waste on behalf of dismantler, re-furbisher and recycler including those arising from orphaned products.
3. They have to ensure that the e-waste collected by them is stored in a secured manner till it is sent to authorised dismantler or recycler as per item no. 6 in Chapter II of e-waste (Management) Rules 2016.

d. **Dealers –**

1. Collection on behalf of the producer.
2. Collect the e-waste by providing the consumer a box, bin or a demarcated area to deposit e-waste or through take back system and send the e-waste so collected to collection centre or dismantler or recycler as designated by producer.
3. Refund the amount as per take back system or Deposit Refund Scheme of the producer to the depositor of e-waste as per item no. 7 in Chapter II of e-waste (Management) Rules 2016.

e. **Bulk consumers or consumers-**

1. To ensure that the e-waste generated by them is channelized through collection centre or dealer of authorised producer or dismantler or recycler or through the designated take back service provider of the producer to authorised dismantler or recycler as per item no. 9 in Chapter II of e-waste (Management) Rules 2016.

f. **Dismantlers –**

1. To ensure that dismantled e-waste are segregated and sent to the authorized recycling facilities for recovery of materials and that non-recyclable or non-recoverable components are sent to authorised treatment storage and disposal facilities.
2. Dismantlers are not permitted to process any e-waste for recovery or refining of materials, unless authorised with the SPCB as a recycler for refining and recovery of materials as per item no. 10 in Chapter II of e-waste (Management) Rules 2016.

g. **Recycler –**

1. To ensure that the fractions or material not recycled in its facility is sent to the respective authorized recyclers and that residue generated during recycling process is disposed of in an authorised treatment storage disposal facility (of HW) as per item no. 11 in Chapter II of e-waste (Management) Rules 2016.

h. **Manufacturers –**

1. Responsibility of manufacturer is to collect e-waste generated during the manufacturing of any electrical and electronic equipment and channelise it for recycling or disposal as per item no. 4 in Chapter II of e-waste (Management) Rules 2016.

i. **Re-furbisher –**

1. Re-furbisher should collect e-waste generated during the process of refurbishing and channelise the waste to authorised dismantler or recycler through its collection centre.
2. To ensure that the e-waste thus generated is safely transported to authorised collection centres or dismantlers or recyclers as per item no. 8 in Chapter II of e-waste (Management) Rules 2016.

j. **Citizens-**

1. To handle devices with care to prolong lifeline to reduce e-waste.
2. Purchase only certified products.
3. Upgrade devices instead of buying new one.
4. Give dead electronic devices to recycling industry.
5. Educate children for the use of electronic devices & hazards of waste.

Department of environment and Climate Change will be the nodal department and Rajasthan State Pollution Board will be the nodal agency for implementation of the e-waste Policy.

A State Level Committee will be constituted under the Chairmanship of Principal Secretary Environment & Climate Change for review of the progress of implementation of the Policy as follows:

S.NO	NAME	PARTICULARS
1	Principal Secretary Environment	Chairman
2	Pr. Secretary/ Secretary LSG Department	Member
3	Pr. Secretary/ Secretary IT&C Department	Member
4	Pr. Secretary/ Secretary Industries Department	Member
5	Pr. Secretary/ Secretary UDH Department	Member
7	Pr. Secretary/ Secretary Education Department	Member
8	Pr. Secretary/ Secretary Transport Department	Member
9	Pr. Secretary/ Secretary Science & Technology Department	Member
10	Pr. Secretary/ Secretary Energy Department	Member
11	Member Secretary RSPCB	Member Secretary

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Annexure-1

Sr. No.	Categories of electrical and electronic equipment	Electrical and electronic equipment code
i.	**Information technology and telecommunication equipment**	
	Centralized data processing: Mainframes, Minicomputers	ITEW1
	Personal Computing: Personal Computers (Central processing unit with input and output devices)	ITEW2
	Personal Computing: Laptop Computers (Central Processing Unit with input and output devices)	ITEW3
	Personal Computing: Notebook Computers	ITEW4
	Personal Computing: Notepad Computers	ITEW5
	Printers including cartridges	ITEW6
	Copying equipment	ITEW7
	Electrical and electronic type writers	ITEW8
	User terminals and systems	ITEW9
	Facsimile	ITEW10
	Telex	ITEW11
	Telephones	ITEW12
	Pay telephones	ITEW13
	Cordless telephones	ITEW14
	Cellular telephones	ITEW15
	Answering systems	ITEW16
ii.	**Consumer electrical and electronics**	
	Television sets (including sets based on Liquid Crystal Display and Light Emitting Diode technology)	CEEW1
	Refrigerator	CEEW2
	Washing machine	CEEW3
	Air-conditioners excluding centralized air conditioning plants	CEEW4
	Fluorescent and other Mercury containing lamps	CEEW5

Annexure-2

Metal	Harmful Effects
Lead	A neurotoxin that affects the kidneys and the reproductive system. High quantities can be fatal. It affects mental development in children. Mechanical breaking of CRTs (cathode ray tubes) and removing solder from microchips release lead as powder and fumes.
Plastics	Found in circuit boards, cabinets and cables, they contain carcinogens. BFRs or brominated flame retardants five out carcinogenic brominated dioxins and furans. Dioxins can harm reproductive and immune systems. Burning PVC, a component of plastics, also produces dioxins. BFR can leach into landfills. Even the dust on computer cabinets contains BFR.
Chromium	Used to protect metal housings and plates in a computer from corrosion. Inhaling hexavalent chromium or chromium 6 can damage liver and kidneys and cause bronchial maladies including asthamatic bronchitis and lung cancer.
Mercury	Affects the central nervous system, kidneys and immune system. It impairs foetus growth and harms infants through mother's milk. It is released while breaking and burning of circuit boards and switches. Mercury in water bodies can form methylated mercury through microbial activity. Methylated mercury is toxic and can enter the human food chain through aquatic.
Beryllium	Found in switch boards and printed circuit boards. It is carcinogenic and causes lung diseases.
Cadmium	A carcinogen. Long-term exposure causes itai-itai disease, which causes severe pain in the joints and spine. It affects the kidneys and softens bones. Cadmium is released into the environment as powder while crushing and milling of plastics, CRTs and circuit boards. Cadmium may be released with dust, entering surface water and groundwater.
Acid	Sulphuric and hydrochloric acids are used to separate metals from circuit boards. Fumes contain chlorine and sulphur dioxide, which cause respiratory problems. They are corrosive to the eye and skin.

Source: 'IT's underbelly', Down to Earth, vol.19, no.1, May 16-31, 2010

Annexure-3

Sr. No.	Categories of electrical and electronic equipment	EEE Code	Average Life
i.	**Information technology and telecommunication equipment**		
	Centralized data processing:	ITEW1	
	Mainframe		10Years
	Minicomputer		5Years
	Personal Computing: Personal Computers (Central Processing Unit with input and output devices)	ITEW2	6Years
	Personal Computing:Laptop Computers(Central Processing Unit with input and output devices)	ITEW3	5Years
	Personal Computing: Notebook Computers	ITEW4	5Years
	Personal Computing: Notepad Computers	ITEW5	5Years
	Printers including cartridges	ITEW6	10Years
	Copying equipment	ITEW7	8Years
	Electrical and electronic typewriters	ITEW8	5Years
	User terminals and systems	ITEW9	6Years
	Facsimile	ITEW10	10Years
	Telex	ITEW11	5Years
	Telephones	ITEW12	9Years
	Pay telephones	ITEW13	9Years
	Cordless telephones	ITEW14	9Years
	Cellular telephones	ITEW15	
	Feature phones		7Years
	Smart phones		5Years
	Answering systems	ITEW16	5Years
ii.	**Consumer electrical and electronics**		
	Television sets (including sets based on (Liquid Crystal Display and Light Emitting Diode technology)	CEEW1	9 Years
	Refrigerator	CEEW2	10 Years
	Washing Machine	CCEW3	9 Years
	Air-conditioners excluding centralized air conditioning plants	CCEW4	10 Years
	Fluorescent and other Mercury-containing lamps	CEEW5	2 Years

Note: The above-mentioned items can be used beyond the mentioned/specified life till such time these items continue to serve the purpose.