

"ഭരണഭാഷ- മാതൃഭാഷ"



കേരള സർക്കാർ

സംഗ്രഹം

തദ്ദേശ സ്വയംഭരണ വകുപ്പ് - ഇ-മാലിന്യത്തിന്റെ ശേഖരണം, വേർതിരിക്കൽ, സംസ്കരണ സംവിധാനങ്ങൾ സ്ഥാപിക്കൽ എന്നിവ ഉൾപ്പെടുന്ന ഇ-വേസ്റ്റ് മാനേജ്മെന്റ് സംബന്ധിച്ച Standard Operating Procedure (SoP) അംഗീകരിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു

തദ്ദേശ സ്വയംഭരണ (ഡബ്ല്യു.എം) വകുപ്പ്

G.O.(Rt)No.2531/2025/LSGD തീയതി,തിരുവനന്തപുരം, 19-10-2025

- പരാമർശം:-
1. ഇ-വേസ്റ്റ് മാനേജ്മെന്റ് ചട്ടങ്ങൾ, 2022
 2. ശുചിത്വ മിഷൻ എക്സിക്യൂട്ടീവ് ഡയറക്ടറുടെ 16-08-2025-ലെ SM/2523/2024-C3 നമ്പർ കത്ത്

ഉത്തരവ്

പരാമർശം (1) -ലെ ഇ-വേസ്റ്റ് മാനേജ്മെന്റ് ചട്ടങ്ങൾ 2022, പ്രകാരം ഇ-മാലിന്യത്തിന്റെ ശേഖരണം, വേർതിരിക്കൽ, സംസ്കരണ സംവിധാനങ്ങൾ സ്ഥാപിക്കൽ, അവ തരം തിരിച്ച് ശേഖരിച്ച് അംഗീകൃത റിസൈക്ലറീനോ റീഫർബിഷറീനോ കൈമാറൽ തുടങ്ങിയവ തദ്ദേശ സ്ഥാപനങ്ങളുടെ ഉത്തരവാദിത്വമാണെന്നും വലിയ തോതിൽ ഇ-മാലിന്യം ഉല്പാദിപ്പിക്കുന്നവർ നേരിട്ട് തന്നെ അവ റിസൈക്ലർക്ക് കൈമാറണമെന്നും നിഷ്കർഷിക്കുന്നു. നിലവിൽ ആപത്ക്കര ഇ-മാലിന്യം ഉൾപ്പെടെയുള്ള ഇ-മാലിന്യം അനധികൃത ശേഖരണ കച്ചവടക്കാർക്ക് കൈമാറുകയും അവർ അതിൽ നിന്നും മൂല്യമുള്ളത് എടുത്തതിന് ശേഷം മറ്റ് ആപത്ക്കര ഇ-മാലിന്യങ്ങളായ ട്യൂബ് ലൈറ്റ്, പികച്ചർ ട്യൂബ് തുടങ്ങിയവ ജലസ്രോതസ്സുകളിലേക്കും പൊതു സ്ഥലത്തേക്കും വലിച്ചെറിയുകയും ചെയ്യുന്ന പ്രവണത നിലനിൽക്കുന്നതായും ഇത് തടയുന്നതിലേക്കായി ഇ-മാലിന്യം സമ്പൂർണ്ണമായി ശേഖരിക്കാനുള്ള ക്രമീകരണം ഏർപ്പെടുത്തേണ്ടതുണ്ടെന്ന് സർക്കാർ നിരീക്ഷിക്കുകയുണ്ടായി.

അജൈവ പാഴ് വസ്തു ശേഖരണ കലണ്ടർ പ്രകാരം സംസ്ഥാനത്തെ തദ്ദേശ സ്ഥാപനങ്ങളിൽ നിന്നും ഹരിതകർമ്മസേന മുഖേന വർഷത്തിൽ 2 തവണ ഇ-മാലിന്യം ശേഖരിക്കുന്നതിന് നിലവിൽ ക്രമീകരണമുണ്ടെങ്കിലും ഇ-മാലിന്യം കൃത്യമായി ഹരിതകർമ്മസേനക്ക് കൈമാറാൻ ഉപഭോക്താക്കളെ പ്രേരിപ്പിക്കുന്ന വിവിധ തരത്തിലുള്ള പ്രവർത്തനങ്ങൾ നിലവിൽ വരുത്തേണ്ടത് ആവശ്യമാണ്. പ്രസ്തുത ലക്ഷ്യത്തോടെ ഇ- വേസ്റ്റ് മാനേജ്മെന്റ് സംബന്ധിച്ച കരട് Standard Operating Procedure (SoP) ശുചിത്വ മിഷൻ, എക്സിക്യൂട്ടീവ് ഡയറക്ടർ പരാമർശം (2) പ്രകാരം സർക്കാരിൽ സമർപ്പിക്കുകയുണ്ടായി.

സർക്കാർ ഇക്കാര്യം വിശദമായി പരിശോധിച്ചു. സംസ്ഥാനത്ത് ഇലക്ട്രോണിക് മാലിന്യങ്ങൾ (ഇ-വേസ്റ്റ്) ഫലപ്രദമായി കൈകാര്യം ചെയ്യുന്നതിന് ആവശ്യമായ പൊതുവായ നിയമങ്ങളും

നല്ല രീതികളും (good practices) നിർവ്വചിക്കുന്നതും വ്യവസ്ഥാപിതവും ശാസ്ത്രീയവുമായ രീതിയിലേക്ക് ഇ-വേസ്റ്റ് മാനേജ്മെന്റ് കൊണ്ടുവരുന്നതും അവയുടെ ശാസ്ത്രീയമായ സംസ്കരണത്തിനും അതുവഴി ഇ-വേസ്റ്റ് മാനേജ്മെന്റുമായി ബന്ധപ്പെട്ട അപകടസാധ്യതകൾ നിയന്ത്രിക്കാനും കുറയ്ക്കാനും ബന്ധപ്പെട്ടവരെ സഹായിക്കുമെന്ന് പ്രതീക്ഷിക്കുന്നു. ഈ സാഹചര്യത്തിൽ പരിസ്ഥിതി സൗഹൃദ രീതിയിൽ ഇ-മാലിന്യങ്ങൾ ശേഖരിക്കുകയും കൈകാര്യം ചെയ്യുകയും ചെയ്യുക എന്ന കേന്ദ്ര മലിനീകരണ നിയന്ത്രണ ബോർഡിന്റെ നിർദ്ദേശങ്ങൾക്കനുസൃതമായി തയ്യാറാക്കിയ ഇ- വേസ്റ്റ് മാനേജ്മെന്റ് സംബന്ധിച്ച Standard Operating Procedure (SoP), അനുബന്ധമായി ചേർക്കും പ്രകാരം അംഗീകരിച്ച് കൊണ്ട് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.

(ഗവർണ്ണറുടെ ഉത്തരവിൻ പ്രകാരം)

ANUPAMA T V I A S
SPECIAL SECRETARY

പ്രിൻസിപ്പൽ ഡയറക്ടർ, തദ്ദേശ സ്വയംഭരണ വകുപ്പ്
എക്സിക്യൂട്ടീവ് ഡയറക്ടർ, ശുചിത്വ മിഷൻ
പ്രോജക്ട് ഡയറക്ടർ, കെ എസ് ഡബ്ല്യൂ എം പി
എക്സിക്യൂട്ടീവ് ഡയറക്ടർ, കുടുംബശ്രീ
മാനേജിങ് ഡയറക്ടർ, ക്ലീൻ കേരള കമ്പനി ലിമിറ്റഡ്
പ്രിൻസിപ്പൽ അക്കൗണ്ടന്റ് ജനറൽ (എ& ഇ/ ഓഡിറ്റ്) കേരളം തിരുവനന്തപുരം
എക്സിക്യൂട്ടീവ് ഡയറക്ടർ, ഇൻഫോർമേഷൻ കേരളാ മിഷൻ
വെബ് & ന്യൂ മീഡിയ, ഐ& പി ആർ ഡി
കരുതൽ ഫയൽ / ഓഫീസ് കോപ്പി

ഉത്തരവിൻ പ്രകാരം

Signed by

Manish V V

Date: 21-10-2025 11:15:42

STANDARD OPERATING PROCEDURE

FOR

E-WASTE MANAGEMENT



August, 2025

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1. INTENT

This document defines the general rules and good practices required for effective management of Electronic waste (E-waste). It intends to bring in systematic and scientific management of E-waste in the State and is expected to help stakeholders control and reduce the risks associated with the management of E-waste. Central Pollution Control Board requirements are to collect and manage E-waste in an environmentally friendly manner, and following this SOP helps comply with the requirements.

2. DEFINITIONS

'Bulk consumer' means any entity which has used at least one thousand units of electrical and electronic equipment listed in Schedule I of E-Waste (Management) Rules, 2022, at any point of time in the particular Financial Year and includes e-retailer;

'Consumer' means any person using electrical and electronic equipment excluding the bulk consumers.

'Dismantler' means any person or entity engaged in dismantling of used electrical and electronic equipment and components thereof in accordance with the guidelines of the Central Pollution Control Board made in this regard.

'Disposal and treatment' means any operation which does not lead to recycling, recovery or reuse and includes physicochemical or biological treatment, incineration and deposition in secured landfill;

'Electrical and electronic equipment' means equipment which are dependent on electric current or electro-magnetic field in order to become functional and also the equipment for the generation, transfer and measurements of the electricity

'End of life' of the product means the time when the product is intended to be discarded by the user.

'Environmentally sound management of e-waste' means taking all steps required to ensure that e-waste is managed in a manner which shall protect health and environment against any adverse effects, which may result from such e-waste;

'E-retailer' means an individual or company or business entity that uses an electronic network such as internet, social media, telephone or any other media, to sell its goods;

'E-waste' means electrical and electronic equipment, including solar photo-voltaic modules or panels or cells, whole or in part discarded as waste, as well as rejects from manufacturing, refurbishment and repair processes;

'Extended producer responsibility' means responsibility of any producer of electrical or electronic equipment as given in Schedule-I of e-waste management rules for meeting recycling targets as per Schedule-III and Schedule-IV, only through registered recyclers of e-waste to ensure environmentally sound management of such waste;

'Facility' means any location wherein the process incidental to the collection, reception, storage, segregation, refurbishing, recycling, disposal and treatment of e-waste are carried out;

'Historical e-waste' means e-waste generated from electrical and electronic equipment as specified in Schedule-I of e-waste management rules which was available on the date from which e-waste management rules come into force;

'Manufacturer' means a person or an entity or a company as defined in the Companies Act, 2013 (18 of 2013) or a factory as defined in the Factories Act, 1948 (63 of 1948) or Small and Medium Enterprises as defined in the Micro, Small and Medium Enterprises Development Act, 2006 (27 of 2006), which has facilities for manufacture of electrical and electronic equipment as specified in Schedule-I of e-waste management rules;

'Orphaned products' means non-branded or assembled electrical and electronic equipment as specified in Schedule-I of e-waste management rules or those produced by a company which has closed its operations.

'Portal' means the online system developed by the Central Pollution Control Board for the purposes of e-waste management rules;

'Producer' means any person or entity who, -

- (i) manufactures and offers to sell electrical and electronic equipment and their components or consumables or parts or spares under its own brand; or
- (ii) offers to sell under its own brand, assembled electrical and electronic equipment and their components or consumables or parts or spares produced by other manufacturers or suppliers; or
- (iii) offers to sell imported electrical and electronic equipment and their components or consumables or parts or spares; or

(iv) who imports used electrical and electronic equipment; irrespective of the selling technique used such as dealer, retailer, e-retailer, etc.;

‘Recycler’ means any person or entity who is engaged in recycling and reprocessing of waste electrical and electronic equipment or assemblies or their components or their parts for recovery of precious, semi-precious metals including rare earth elements and other useful recoverable materials to strengthen the secondary sourced materials and having facilities as elaborated in the guidelines of the Central Pollution Control Board made in this regard;

‘Refurbisher’ means any person or entity repairing or assembling used electrical and electronic equipment as listed in Schedule-I of e-waste management rules for extending its working life over its originally intended life and for same use as originally intended, and selling the same in the market;

‘Spares’ means a part or a sub-assembly or assembly for substitution which is ready to replace an identical or similar part or sub-assembly or assembly including a component or an accessory;and

‘Target’ means the quantity of e-waste to be recycled through registered recycler by the producer in fulfilment of extended producer responsibility

3. APPLICABLE RULES

E-Waste Management Rules, as amended from time to time.

The Ministry of Environment and Climate Change (MoEFCC) has notified the **E-Waste (Management) Rules, 2022** on 2nd November, 2022 under the Environment (Protection) Act, 1986 (29 of 1986). These rules will replace E-waste (Management) Rules, 2016 and is effective from 1st April, 2023. **These rules will launch a new Extended Producer Responsibility (EPR) regime for e-waste recycling.**

These rules shall 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 I of the E-Waste (Management) Rules, 2022, including their components, consumables, parts and spares which make the product operational.

However, these Rules **shall not apply to -**

- (a) waste batteries as covered under the Battery Waste Management Rules, 2022;
- (b) packaging plastics as covered under the Plastic Waste Management Rules, 2016;
- (c) micro enterprise as defined in the Micro, Small and Medium Enterprises Development Act, 2006 (27 of 2006); and
- (d) radio-active wastes as covered under the provisions of the Atomic Energy Act, 1962 (33 of 1962) and rules made thereunder.

Highlights of mandates under the E-Waste (Management) Rules, 2022 are listed below:

1. All the manufacturers, producers, refurbishers and recyclers are required to **register on the portal** developed by CPCB.
2. No entity shall carry out any business without registration and also not deal with any unregistered entity.
3. Manufacturer, producer, refurbisher and recycler require registration through online portal.
4. As per Schedule I of E-Waste (Management) Rules, 2022, 106 Electrical and Electronic Equipment (EEE) has been included under the EPR regime.
5. Producers of notified EEE, have been given **annual E-Waste Recycling targets** based on the generation from the previously sold EEE or based on sales of EEE as the case may be. Target may be made stable for 2 years and starting from 60% for the year 2023-2024 and 2024-25; 70% for the year 2025-26 and 2026-27 and 80% for the year 2027-28 and 2028-29 and onwards.
6. Management of solar PV modules /panels/ cells added in these rules.
7. The quantity recycled will be computed on the basis of end products, so as to avoid any false claim.
8. Provision for generation and transaction of **EPR Certificate has been introduced**.

9. Provisions for environment compensation and verification & audit have been introduced.
10. Provision for constitution of Steering Committee to oversee the overall implementation of these rules.
11. Under the E-Waste Management Rules, provision for reduction of hazardous substances in manufacturing of Electrical and Electronic Equipment (EEE) has been provided. It mandates that every producer of EEE and their components shall ensure that their products do not contain lead, mercury and other hazardous substances beyond the maximum prescribed concentration.
12. The E-Waste (Management) Rules also provide for recognition and registration, skill development, monitoring and ensuring safety and health, of workers involved in dismantling and recycling of E-waste.
13. These rules regulate the management of electronic waste, or e-waste, focusing on the recycling and reduction of hazardous substances used in electronics. Similar to the Plastic Waste Management Rules, they incorporate principles of EPR, requiring manufacturers to facilitate the collection and recycling of electronic waste. Producers of electronic goods must establish collection facilities (working closely with local bodies and private authorized agencies), provide financial assistance for collection and further channelisation of waste to authorized recyclers/ refurbishers, create EPR plans detailing their e-waste management strategies, and obtain authorization from KSPCB.
14. As per the rules, the **producers are required to fulfil their Extended Producer Responsibility (EPR) obligations assigned to them through online purchase of EPR Certificates from registered Recyclers of E-Waste only.** Further, as per the provisions laid in the Rules, the Central Pollution Control Board shall generate an EPR certificate through Portal in favour of registered Recyclers. The quantity eligible for generation of EPR certificate shall be based on the quantity of E-Waste recycled by the Recyclers.
15. The **registered recyclers have to upload details of the quantity of E-Waste procured/collected, recycled, and end products produced and sold on the**

E-Waste EPR Portal. Based on the information uploaded on the Portal, EPR certificates will be generated in favour of the recycler by CPCB through the Portal. The certificates shall be subject to environmental audit by the Central Pollution Control Board or any other agencies authorised by the Central Pollution Control Board in this regard.

16. The **procedure for the generation of an EPR certificate** involves the following steps:

- i. Provide information on the quantity of E-Waste Procurement data (in tonnes) and upload copies of corresponding invoices.
- ii. Provide production details in terms of end products based on the quantity of E-Waste recycled from the quantity of procured E-Waste as at (i) above.
- iii. Generate EPR credits in the form of four end products i.e. Gold, Iron, Copper & Aluminum
- iv. Enter the quantity of end products sold.
- v. Upload GST-linked sales invoice corresponding to the end product sold
- vi. Generate an EPR Certificate in the denomination of 0.01, 0.001, 0.1, 0.5, 1, 10, 50, 100, 500, 1000.
- vii. Sell EPR certificates to producers for fulfillment of their EPR obligations.

17. Following are the **guidance on the generation & transfer of the EPR certificates/credits** for e-waste recyclers.

- a. Ensure sequential submission/ upload of invoices with respect to procurement of raw material (e-waste – item code wise) and sale of end products.
- b. Sequence of procurement dates and sales dates are to be maintained.
(Note: Oldest date needs to be provided first, and sequence needs to be maintained).

- c. Maintain records of the quantity of E-Waste collected/procured, processed/recycled and end product sold as per the forms on the EPR Portal along with the invoices & other details
- d. Ensure correctness of data w.r.t. E-Waste collected/procured, processed/recycled and sold end product.
- e. Generate ERR certificates/ credits based on the quantity of e-waste recycled and the quantity of end products sold.
- f. Upload invoices with respect to procurement of e-waste and sales of end products by the recycler. The end product sales invoices have to be GST-linked.
- g. Make available all records for verification or audit as and when required.
- h. Follow all the instructions/guidance as available on the EPR Portal as data edition/deletion will not be allowed in case EPR certificate generation and transaction has been done by the recycler.
- i. File annual and quarterly returns in the laid down form on the portal on or before the end of the month succeeding the quarter or year, as the case may be, to which the return relates.
- j. Ensure that the fractions or material not recycled in its facility is sent to the respective registered recyclers or/and authorised treatment storage disposal facility (TSDF).
- k. The validity of the extended producer responsibility (EPR) certificate shall be for two years from the end of the financial year in which it was generated and the expired certificate automatically extinguished after the period unless extinguished earlier as per the provisions of these rules.
- l. The details provided by the producer and registered recycler shall be cross-checked on the portal.

- m. In case of any difference, the lower figure shall be considered towards the fulfilment of the extended producer responsibility (EPR) obligation of the producer.

4. OBJECTIVES OF E-WASTE MANAGEMENT RULE

- a. Environmentally safe management of E-waste by promoting sustainable technologies through authorised dismantlers and recyclers.
- b. Implement **Extended Producer Responsibility (EPR)**. The EPR mechanism lays emphasis on producers' responsibility for environmentally sound management of E-waste and promotes the establishment of an efficient E-waste collection mechanism, through buy-back and take-back systems.

5. OVERALL LAYOUT OF E-WASTE MANAGEMENT PROCESS

The flow diagram of the overall E-waste management process is shown below :

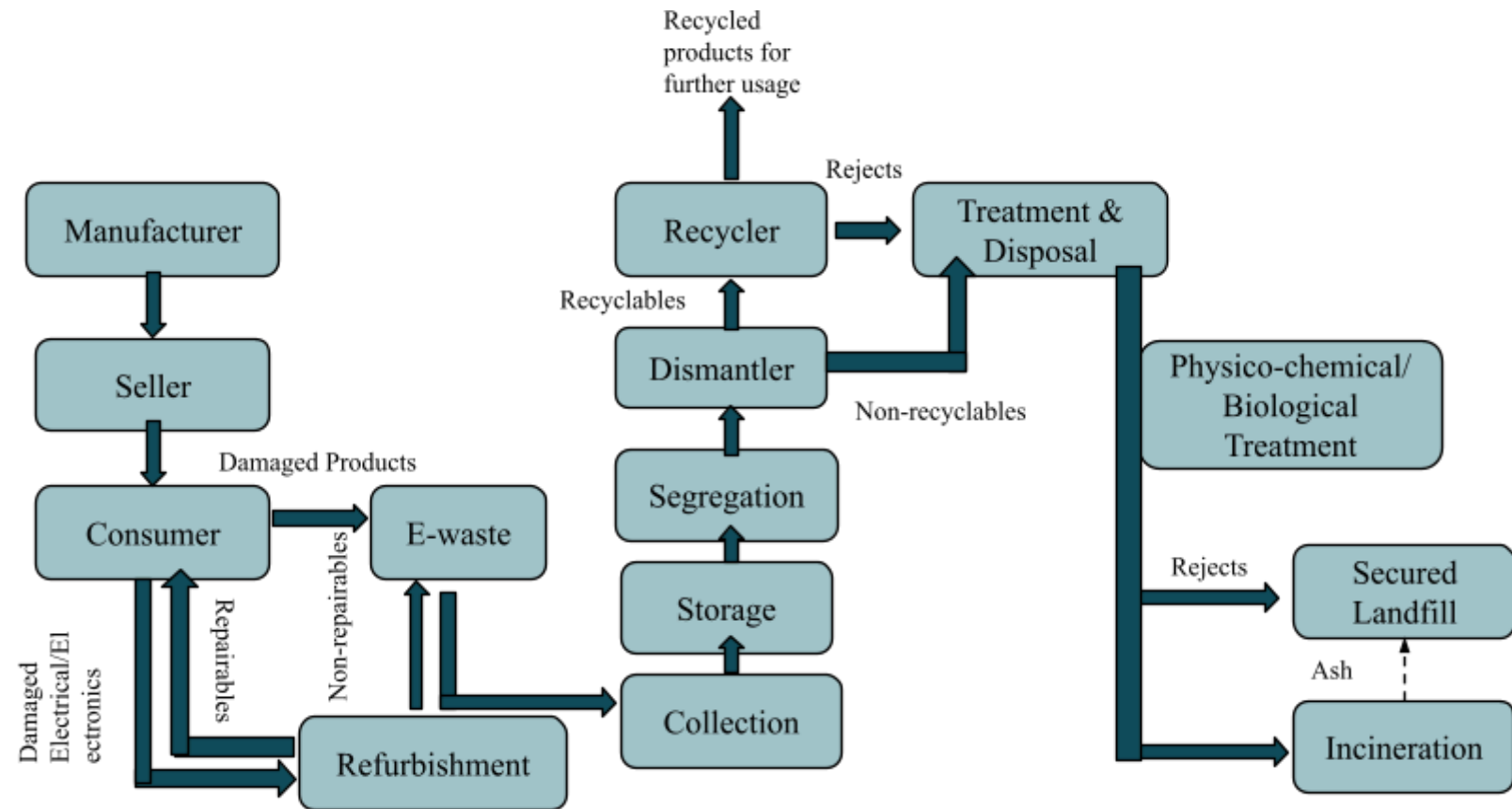


Figure: Flow Diagram of E-waste Management

(The diagram depicts the overall waste management scenario and the EPR mechanism as mentioned in the E-waste rules shall apply at various stages wherever applicable)

6. RESPONSIBILITIES OF STAKEHOLDERS

6.1. Responsibilities of Local Bodies

- a) LSGs to take responsibility for the collection , segregation, transportation of e-waste . co-ordinate its transfer to authorized recycler.
- b) Conduct IEC campaigns and trainings in collaboration with CKCL and Suchitwa Mission to raise awareness of the stakeholders through various IEC tools and to improve the e-waste management system/practices.
- c) Ensure that hazardous and non-hazardous e-waste generated within the local body are separately collected and managed.
- d) Ensure that the manufacturers and producers of e-waste promote the establishment of an efficient e-waste collection mechanism, through buy-back and take-back systems.
- e) Set up collection centers/collection mechanisms for e-waste as per the requirement **(EPR-based collection system to be facilitated on priority)**.
- f) During e-waste collection carried out by the local body, it is recommended to undertake the collection of smaller items coming under the e-waste category through door-to-door collection mechanism and larger and heavy items like refrigerators, washing machines etc getting deposited by the generator at the deposition centers **(drop points)**.
- g) Local bodies shall establish waste deposition centres and give directions for waste generators to deposit larger e-waste at this centre for its safe management.
- h) These dropping centers are to be established by LSGIs at identified prominent locations.
- i) Container-type collection centres can be established by the local bodies in areas where it is difficult to earmark a permanent building as a collection facility.
- j) Notify the timings of receiving e-waste at such centers.

- k) At the dropping centers, it shall be ensured that the hazardous and non-hazardous e-waste is separately collected, stored and managed
- l) Shall promote the establishment of refurbishment centres to extend the life of electrical and electronic equipment.
- m) Local bodies shall ensure efficient collection and forward linkage of the collected e-waste.

The following hazardous e-waste items (subject to change as decided by the Govt.) can be collected by CKCL by charging a rate permitted by the Government.

1. CFLs,	2. DVDs
3. Tube lights	4. Magnetic Tapes
5. Floppies	6. Light fittings
7. Used Toner Cartridges	8. Reels
9. Toys	10. Picture tubes
11. CDs	12. Broken television
13. Emergency Lamp	14. Cannibalized broken IT material and electric parts

The following e-waste items can be collected by CKCL by paying the generator a rate approved by the Government.

1. CPU with all accessories	2. Water Heater
3. LCD/LED and CRT Monitors	4. Electronic stove /Induction Cooker
5. Laptops	6. AC
7. Servers	8. Chargers
9. Hard disks	10. Air Cooler
11. RAM	12. Radio/tape recorder
13. PCB boards	14. Ceiling fan

15. CD Drive	16. Pedestal/Table Fans
17. UPS	18. CD / DVD player
19. Cables	20. Lead Acid batteries
21. Keyboard	22. VCR
23. Mouse	24. Telephone
25. Fax machine	26. Mobile Phone
27. Printer	28. Connector
29. Projector	30. Thumb drives
31. Photo Copy Machine	32. Power control units
33. Scanner and all type of IT accessories	34. Handsets
35. Home appliances	36. Motors
37. Refrigerator	38. Calculators etc
39. Washing machine	40. Chokes
41. Television	42. Broken IT material and electronic peripherals
43. Iron Box	44. Sound systems

- n) Harita Karma Sena (HKS) may be entrusted by the local bodies for the door to door collection of e-waste.
- o) Local bodies shall ensure that E-waste is collected separately as hazardous and non-hazardous category during the door to door pick ups.
- p) The recyclable e-waste may be collected by HKS by paying the generator the rate approved by the Govt (**CKCL to provide local bodies the approved collection rate details based on the product category**)
- q) An advance amount to be made available to HKS consortium for collecting the recyclable e-waste by paying the generator the amount based on the weight of the collected e-waste quantity.
- r) The above amount may be made available from the HKS consortium fund or LSGI fund.

- s) Local bodies shall ensure that HKS undertaking door to door collection has proper weighing machines and receipt book (or app-based system) to record the quantum of e-waste collected and the amount transacted. It shall be ensured that HKS handover receipt to the e-waste generator for the quantum of e-waste collected from households/institutions and at drop points.
- t) Also it shall be ensured that appropriate covered vehicle is made available for the HKS to transfer the collected e-waste through door to door pick ups to designated collection facilities without compromising their potential for reuse after refurbishing or recycling
- u) Ensure that the advance amount made available to HKS consortium is adjusted when CKCL lifts the collected e-waste after paying HKS the approved rate.
- v) Local bodies shall claim the benefits under the EPR provisions of the e-waste management rules for the services provided.
- w) Local bodies need to ensure that illegal e-waste dismantling/management practices do not happen within the local body
- x) Ensure that the agency undertaking non-hazardous e-waste/ hazardous e-waste collection has agreement with an authorized e-waste recycling/disposal facility.
- y) Ensure during the license renewal procedure of manufacturers and producers of e-waste (under the local bodies jurisdiction) comply with their responsibilities for environmentally sound management of E-waste
- z) Ensure during the license renewal procedure of establishments within its jurisdiction, that the e-waste generated by them is properly managed and timely forward linkage is ensured.
- aa) Ensure that e-waste pertaining to orphan products is collected and channelized to registered recyclers or refurbishers.

- bb) To ensure that e-waste if found to be mixed with Municipal Solid Waste is properly segregated, collected and is channelized to registered recycler or refurbisher.
- cc) Ensure that the workers involved in e-waste management use proper personal protective and safety equipment.
- dd) Ensure that labour laws are complied with respect to the persons engaged in e-waste collection, transportation and processing operations.

6.2 Responsibilities of CKCL

- a. Clean Kerala Company Limited (CKCL) is authorized by the State Government to collect E-waste within the State. Timely lifting of collected e-waste from each local body shall be carried out by CKCL as per the notified collection calendar.
- b. Collection of e-waste as per items falling into non-hazardous/ hazardous categories as detailed in the prevailing G.O. shall be adhered to.
- c. Provide prior information to local bodies about the Govt. approved collection rate details based on the product category (as amended from time to time).
- d. Non-hazardous/Hazardous e-waste are to be collected by CKCL by paying/charging the rate approved by the Govt (this rate is subject to amendment from time to time).
- e. Shall claim the benefits under the EPR provisions of the e-waste management rules for the services provided.
- f. Conduct regular trainings to HKS members for streamlining the e-waste management operations.

6.3 Responsibilities of the State Pollution Control Board

- a. Monitoring and compliance of Extended Producer Responsibility as directed by Central Pollution Control Board
- b. Conduct random inspection of recycler and refurbisher and monitoring recycling capacity utilization.
- c. Inventorisation of e-waste

- d. Implementation of programmes to encourage environmentally sound recycling.

6.4 Responsibilities of the State Government

- a. Department of Industry in State or any other government agency authorised in this regard by the State Government, to ensure earmarking or allocation of industrial space or shed for e-waste dismantling and recycling in the existing and upcoming industrial park, estate and industrial clusters;
- b. Department of Labour in the State or any other government agency authorised in this regard by the State Government shall:
 - i. ensure recognition and registration of workers involved in dismantling and recycling;
 - ii. assist formation of groups of such workers to facilitate setting up dismantling facilities;
 - iii. undertake industrial skill development activities for the workers involved in dismantling and recycling;
 - iv. undertake annual monitoring and to ensure safety & health of workers involved in dismantling and recycling;
- c. State Government to prepare an integrated plan for effective implementation of these provisions, and to submit an annual report to the Ministry of Environment, Forest and Climate Change.

6.5 Responsibilities of the Manufacturers

All manufacturers shall have to

- (a) obtain EPR registration from Central Pollution Control Board through the portal developed by CPCB,
- (b) collect e-waste generated during the manufacture of any electrical and electronic equipment and ensure its recycling or disposal
- (c) file annual and quarterly returns in the laid down form on the portal on or before end of the month succeeding the quarter or year, as the case may be, to which the return relates.

6.6 Responsibilities of the Producers

The producer of electrical and electronic equipment listed in Schedule I of E-Waste (Management) Rules shall be responsible for -

- a. registration on the portal
- b. obtaining and implementing extended producer responsibility targets as per Schedule-III and Schedule-IV of said Rules through the portal
- c. creating awareness through media, publications, advertisements, posters or by any other means of communication;
- d. file annual and quarterly returns in the laid down form on the portal on or before the end of the month succeeding the quarter or year, as the case may be, to which the return relates

6.7 Responsibilities of Bulk Consumers

- a. Bulk consumers of electrical and electronic equipment listed in Schedule I of E-Waste (Management) Rules shall ensure that e-waste generated by them shall be handed over only to the registered producer, refurbisher or recycler.
- b. Primary collection centers shall be established by bulk consumers within their compound for safely handing over e-waste to authorized agencies.

6.8 Responsibilities of Consumers

- a) Consumers are strictly prohibited from disposing of e-waste in the environment and are required to deposit it only at designated collection points or hand it over to authorized collection agents appointed by the local authorities. In many localities, the Haritha Karma Sena undertakes the collection of e-waste from households and institutions according to a scheduled system.
- b) E-waste shall be segregated and separately handed over to authorized agencies as hazardous and non-hazardous categories as notified by the Government.
- c) For end-of-life intact fluorescent and other mercury-containing lamps, it is advisable to pack them securely to prevent breakage during storage and transportation before handing them over.

6.9 Responsibilities of the Refurbishers

All refurbisher shall have to-

- a) register on the portal;
- b) collect e-waste generated during the process of refurbishing and hand over the waste to registered recycler and upload information on the portal;
- c) ensure that the refurbished equipment shall be as per Compulsory Registration Scheme of the Ministry of Electronics and Information Technology and Standards of Bureau of Indian Standards framed for this purpose;
- d) file annual and quarterly returns in the laid down form on the portal on or before the end of the month succeeding the quarter or year, as the case may be, to which the return relates.

6.10 Responsibilities of the Recyclers

All recyclers shall have to, -

- a. register on the portal;
- b. ensure that the facility and recycling processes are in accordance with the standards or guidelines laid down by the Central Pollution Control Board in this regard from time to time;
- c. ensure that the fractions or materials not recycled in its facility are sent to the respective registered recyclers;
- d. ensure that residue generated during the recycling process is disposed of in an authorised treatment, storage and disposal facility;
- e. maintain record of e-waste collected, dismantled, recycled and sent to registered recycler on the portal and make available all records for verification or audit as and when required;
- f. file annual and quarterly returns in the laid down form on the portal on or before the end of the month succeeding the quarter or year, as the case may be, to which the return relates;
- g. accept waste electrical and electronic equipment or components not listed in Schedule-I for recycling provided that they do not contain any radioactive material and same shall be uploaded on the portal;

- h. create awareness through media, publications, advertisements, posters or by such other means of communication;
- i. account for and upload information about any non-recyclable e-waste or any quantity that is not recycled and disposed of;
- j. take help of dismantlers for recycling purposes. Provided that it shall be the responsibility of recycler to ensure proper material flow to and from those dismantlers and the dismantler shall give dismantled material to registered recycler only and maintain a record of the same

7. E-WASTE COLLECTION CENTRES

- a) Collection centres or points play a vital role in the proper channelization of e-waste. These centres have the responsibility to collect and store e-waste and then transfer it to authorised dismantlers or recyclers.
- b) Collection centres specified in the Extended Producer Responsibility (EPR) authorization of the producers can operate. This includes collection centres established by dismantlers, recyclers, or refurbishers, provided they have agreements with producers. If a collection centre serves multiple producers, all such producers must include this information in their EPR application.
- c) Local bodies need to set up collection centers for e-waste as per the requirement **(EPR-based collection system to be facilitated on priority)**. The details regarding the collection centres operated by local bodies are elaborated in the 6.1 Responsibilities of Local Bodies section.
- d) Collection centres are required to collect e-waste on behalf of producers, including waste from orphaned products. Those established by producers can be managed by their Producer Responsibility Organizations (PROs) or by dismantlers and recyclers with agreements with the producers.
- e) Collection points or bins can be located at designated areas such as residential complexes, office buildings, commercial areas, retail outlets, educational institutions, and community organisations. These points should be part of the producer's collection and channelization plan.
- f) Mobile collection vans can also be utilised for door-to-door collection of e-waste from individuals, institutions, and small enterprises. These vans

should be linked to collection centres and, if provided by producers, should be included in their EPR plan.

- g) Material collected at these centres should only be sent to authorised dismantlers and recyclers, except for used fluorescent and other mercury-containing lamps, which may be sent to Treatment, Storage, and Disposal Facilities (TSDFs) if recyclers are not available.

7.1. Facilities required at E-waste Collection Centres

The collection centre must adhere to the provisions outlined in the e-waste management rules and comply with the conditions specified in the Central Pollution Control Board (CPCB) guidelines. Here are the key requirements for a collection centre:

- a. **Accessibility:** The centre should be well connected by roads and accessible for large trucks to facilitate efficient transportation.
- b. **Storage Area:** The storage area should be covered to protect the E-waste from external elements and shall have adequate capacity to store e-waste for up to a period of 15 days to 1 month.
- c. **Segregation:** E-waste must be segregated into different categories, like non-hazardous and hazardous, and stored separately.
- d. **Weighing Equipment:** The centre should have weighing equipment to accurately quantify each delivery received and outgoing, with records maintained accordingly.
- e. **Handling Procedures:** It's crucial for collection centres to securely store the e-waste until it is transferred to authorised dismantlers or recyclers. This ensures that the e-waste remains properly managed and does not pose any risks to human health or the environment. Workers involved in e-waste management shall use proper personal protective and safety equipment.
- f. **Special Handling for Certain Items:** CRTs, LCD/LED/Plasma TVs, and fluorescent and other mercury-containing lamps should be stored securely to prevent damage or breakage.
- g. **Record-Keeping:** Detailed records of e-waste collected and handed over must be maintained.

- h. **Management of Hazardous Materials:** If refrigerators and air conditioners are stored, the centre should have adequate facilities to manage leakage of compressor oils, coolant/refrigerant gases (such as CFCs/HCFCs), and mercury from lamps. This may involve the use of dry sand, absorbent pads, stabilising chemicals, etc., for subsequent transfer to Treatment, Storage, and Disposal Facilities (TSDFs).
- i. **Fire Safety:** The collection centre must have adequate fire-fighting arrangements and emergency exit routes.
- j. **Preservation of End Use:** Loading, transportation, unloading, and storage of e-waste and end-of-life products should not compromise their potential for reuse after refurbishing or recycling.

8. VARIOUS PROCESSES IN E-WASTE MANAGEMENT

8.1 Refurbishing Process

- a. The e-waste shall be allowed for refurbishing and refurbisher shall have to get registered on the portal and based on the data provided, refurbishing certificate shall be generated in favour of a registered refurbisher in the format laid down by it in this regard
- b. On production of the refurbishing certificates purchased from the registered refurbishers, the extended producer responsibility of the producers shall be deferred by the duration as laid down by the Central Pollution Control Board for the corresponding quantity of e-waste and shall be added to the extended producer responsibility of the producer upon expiry of the extended life of the refurbished product.
- c. To incentivise refurbishing, only 75 per cent of the deferred quantity shall be added to the extended producer responsibility of the producer for recycling upon expiry of the extended life of the refurbished product.

Example: - If a producer has extended producer responsibility obligation of 100 tonnes in the year 2023-2024 and he purchases recycling certificate of 60 tonnes and refurbishing certificate of 40 tonnes and the concerned item has extended life of five years due to refurbishing.

In this case 60 tonnes of the extended producer responsibility of the producer shall be achieved in the year 2023-2024 itself and 75 per cent of the remaining 40 tonne i.e. 30 tonnes shall be carried over and added to the extended producer responsibility of that producer for the year 2028-2029 for that item.

- d. The extended producer responsibility obligation shall be extinguished only after end of life disposal through a registered recycler and producing extended producer responsibility certificate and not by refurbishing certificate.

8.2. Dismantling Process

The dismantling of electrical and electronic equipment involves manual separation and segregation of components. It occurs on a dedicated table with a dedusting system comprising suction hoods connected to cyclones, bag filters, and chimneys for safe dust venting. Workers utilise tools like screwdrivers, pliers, and wire cutters, along with personal protective gear.

Components such as batteries, Printed Circuit Boards (PCBs), toner cartridges, and plastic are removed and stored securely for transport to recyclers. Dismantled parts may undergo size reduction for transportation ease, with plastics directed only to registered recyclers. Noise and dust controls are essential during this process. Dismantlers are barred from shredding PCBs, lamps, or performing certain processes like leaching or heating.

Special care is needed for hazardous materials like polychlorinated biphenyls-containing capacitors. Facilities must manage spills and store dismantled parts securely. Premises for dismantling require waterproofing, storage space, and separate containers. Directly usable components are sent to refurbishers, while others go to recyclers based on their nature and hazards.

8.2.1. Space requirement for Dismantlers

A dismantler needs space for storage of electrical and electronic equipment up to 180 days, for process of dismantling and volume reduction and space for storage of dismantled and segregated material and free space for movement and office/administration and other utilities. It is estimated that a minimum of **300 square**

metres area for a dismantling capacity of 1 T/day is required for storage of raw material, segregated material, dismantling operations and office/ administration & other utilities (Ref: CPCB guidelines).

8.3. Recycling Process

Recycling facilities for e-waste are essential for sustainable management, and they can employ various processes including dismantling, shredding, and metallurgical operations. These facilities must comply with regulations and have adequate pollution control measures in place. For CRTs, special procedures are required to contain harmful substances, while LCD and Plasma TVs demand a sealed vacuum dismantling platform. Recovering resources, especially precious metals, is prioritised. Fluorescent lamp recycling units must adhere to strict guidelines for mercury handling, emission control, and waste disposal. Maintaining records of collection, recycling, and waste management is essential for accountability and environmental monitoring.

8.3.1. Space requirement for Recyclers

As a general rule, a recycler of capacity of **1 Ton per day shall require a minimum of 500 square metres area**. Authorisation to recyclers may be preferred if they have a minimum operational capacity of 5 MT/day with an area of about 2500 square metres (Ref: CPCB guidelines).

9. TRANSPORTATION OF E-WASTE

Transportation of e-waste shall comply with the e-waste management rules and CPCB guidelines. Adherence to these guidelines ensures proper management of e-waste while minimising environmental and health risks. Loading, transportation, and unloading of e-waste and end-of-life products should not compromise their potential for reuse after refurbishing or recycling.

10. ACCIDENT REPORTING

Where an accident occurs at the facility processing e-waste or during transportation of e-waste, the producer, refurbisher, transporter, dismantler, or recycler, as the case may

be, shall report immediately to the concerned State Pollution Control Board about the accident through telephone and e-mail.

11. MANAGEMENT OF SOLAR PHOTO-VOLTAIC MODULES OR PANELS, OR CELLS

(1) Every manufacturer and producer of solar photo-voltaic modules or panels or cells shall

- (i) ensure registration on the portal;
- (ii) store solar photo-voltaic modules or panels or cells waste generated up to the year 2034- 2035 as per the guidelines laid down by the Central Pollution Control Board in this regard;
- (iii) file annual returns in the laid down form on the portal on or before the end of the year to which the return relates up to year 2034-2035;
- (iv) ensure that the processing of the waste other than solar photo-voltaic modules or panels or cells shall be done as per the applicable rules or guidelines for the time being in force;
- (v) ensure that the inventory of solar photo-voltaic modules or panels or cells shall be put in place distinctly on portal;
- (vi) comply with standard operating procedure and guidelines laid down by the Central Pollution Control Board in this regard.

(2) Recyclers of solar photo-voltaic modules or panels or cells shall be mandated for recovery of material as laid down by the Central Pollution Control Board in this regard.

12. REFERENCE DOCUMENTS

1. Solid Waste Management Rules, 2016.
2. E-Waste (Management) Rules, 2022.
3. Guidelines on Implementation of E-Waste (Management) Rules, CPCB, 2016.
4. Guidance document for generation and transfer of EPR Certificate for E-Waste Management (Under E-Waste (Management) Rules, 2022), (CPCB)