

Some Highlights of e-Waste Management rules-2022

E-Waste (Management) Rules, 2022 were published by the Government of India in the Ministry of Environment, Forest and Climate Change, vide notification number S.O. 360 (E), dated the 19th May, 2022 in the Gazette of India, Extraordinary, Part II, section 3, sub-section (i), inviting objections and suggestions from all persons likely to be affected. NOW, THEREFORE, in exercise of the powers conferred by sections 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986) read with sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, and in supersession of the E-waste (Management) Rules, 2016, except as respects things done or omitted to be done before such supersession, the Central Government hereby makes the following rules, namely: -

- 1- These rules are called the **E-Waste (Management) Rules, 2022**.
- 2- They shall come into force from the **1st day of April 2023**.

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**, including their components, consumables, parts and spares which make the product operational but 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 there under:

SCHEDULE - I

Categories of electrical and electronic equipment including their components, consumables, parts, and spares covered under the rules.

Sl. No.	Categories of electrical and electronic equipment	Electrical and electronic equipment code
(i)	Information technology and telecommunication equipment	ITEW1-ITEW27
(ii)	Consumer Electrical and Electronics and Photovoltaic Panels	CEEW1- CEEW19
	Fluorescent and other Mercury containing lamps	CEEW5
	Solar panels/cells, solar Photovoltaic panels/cells/modules.	CEEW14
	Luminaires for fluorescent lamps with the exception of luminaires in households	CEEW15
	High intensity discharge lamps, including pressure sodium lamps and metal halide lamps	CEEW16
	Low pressure sodium lamps	CEEW17
	Other lighting or equipment for the purpose of spreading or controlling light excluding filament bulbs	CEEW18
(iii)	Large and Small Electrical and Electronic Equipment	LSEEW1- LSEEW34
(iv)	Electrical and Electronic Tools (With the exception of large- Scale Stationary Industrial Tools)	EETW1- EETW8
(v)	Toys, Leisure, and Sports Equipment	TLSEW1- TLSEW6
(vi)	Medical Devices (With the Exception of All Implanted and Infected Products)	MDW1- MDW10
(vii)	Laboratory Instruments	LIW1- LIW2

Extended Producer Responsibility Framework

Registration. –

(1) The entities shall register on the portal in any of the following category, namely: -

(a) Manufacturer (b) Producer (c) refurbisher and (d) recycler

(2) In case any entity falls in more than one category under sub-rule (1), then the entity shall register under those categories separately.

(3) No entity referred in sub-rule (1) shall carry out any business without registration.

(4) The entities registered under sub-rule (1) shall not deal with any unregistered manufacturer, producer, recycler and refurbisher.

(5) Where any registered entity furnishes false information or willfully conceals information for getting registration or return or report or information required to be provided or furnished under these rules or in case of any irregularity, the registration of such entity may be revoked by the Central Pollution Control Board for a period up to three-years after giving an opportunity to be heard and in addition, environmental compensation charges may also be levied as per rule 22 in such cases.

(6) **The Central Pollution Control Board may charge such registration fee and annual maintenance charges from the entities seeking registration under these rules based on capacity of e-waste generated or recycled or handled by them as laid down by the Central Pollution Control Board with the approval of the Steering Committee**

SCHEDULE -II

Applications, which are exempted from the requirements of sub-rule (1) of rule 1 such as Mercury, Tri band Phosphor, Lead, Chromium, Cadmium limits etc. in different categories of lamps.

SCHEDULE -III

Sl. No.	Year (Y)	E-Waste Recycling Target (by weight)
1.	2023 -2024	60% of the quantity of an EEE placed in the market in year Y-X, where 'X' is the average life of that product
2.	2024 -2025	60% of the quantity of an EEE placed in the market in year Y-X, where 'X' is the average life of that product
3.	2025 -2026	70% of the quantity of an EEE placed in the market in year Y-X, where 'X' is the average life of that product
4.	2026-2027	70% of the quantity of an EEE placed in the market in year Y-X, where 'X' is the average life of that product
5.	2027-2028	80% of the quantity of an EEE placed in the market in year Y-X, where 'X' is the average life of that product
6.	2028-2029	onwards 80% of the quantity of an EEE placed in the market in year Y-X, where 'X' is the average life of that product

Note: (1) E-waste recycling target shall be reviewed and may be increased after the end of year 2028- 2029.

(2) The importers of used electrical and electronic equipment shall have 100% extended producer responsibility obligation for the imported material after end of life, if not re-exported.

(3) E-Waste recycling targets shall not be applicable from solar photovoltaic modules or panels or cells.

SCHEDULE - IV

Extended Producer Responsibility targets for producers, who have started sales operations recently, i.e. number of years of sales operations is less than average life of their products mentioned in the guidelines issued by the Central Pollution Control Board from time to time.

Sl. No.	Year	E-Waste Recycling Target (by weight)
1.	2023-2024	15% of the sales figure of financial year 2021-22
2.	2024-2025	20% of the sales figure of financial year 2022-23
3.	2025-2026 onwards	20% of the sales figure of the financial year two years back

Note:

(1) Once the number of years of sales operation equals the average life of their product mentioned in the guidelines issued by Central Pollution Control Board, their extended producer responsibility obligation shall be as per Schedule-III.

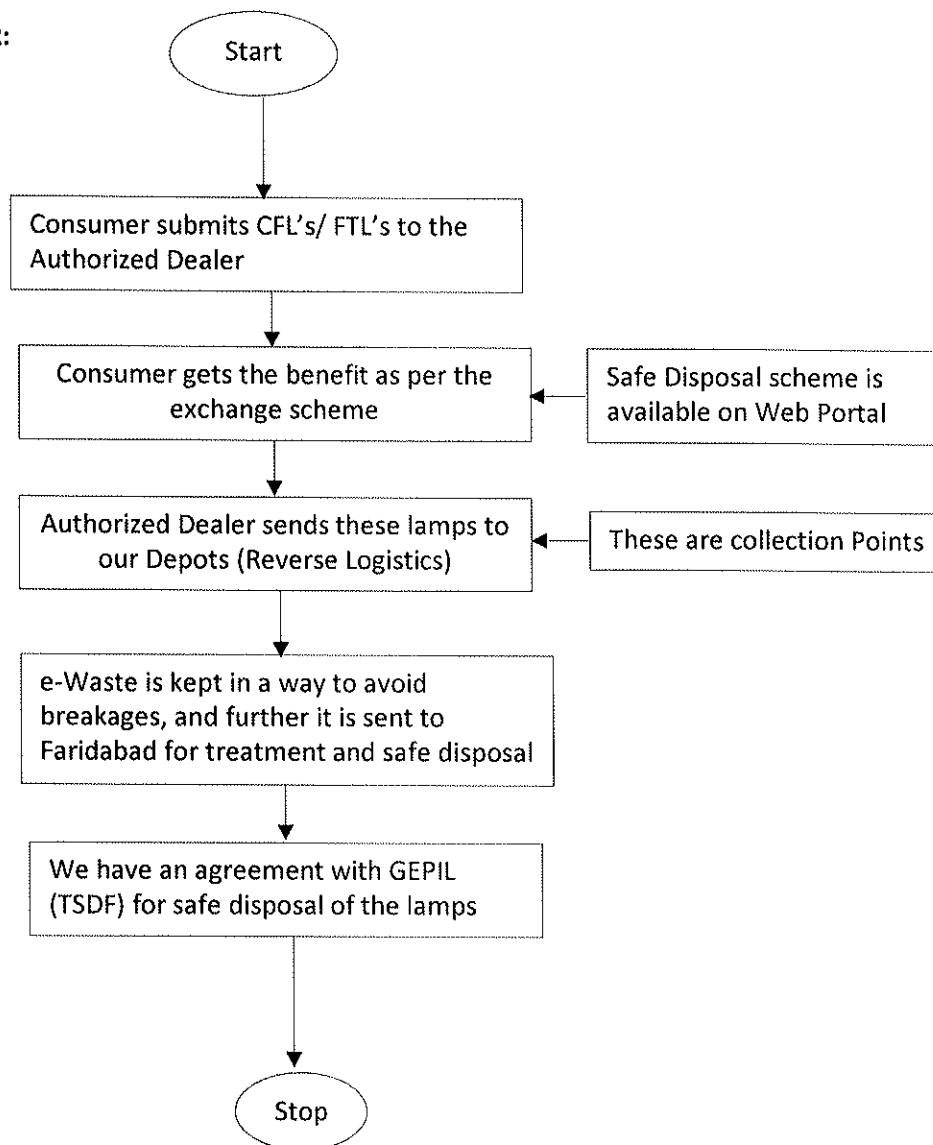
(2) E-Waste recycling targets shall not be applicable for waste generated from solar photo-voltaic modules or panels or cells.

SCHEDULE - V**LIST OF AUTHORITIES AND COPRRRESPONDING DUTIES**

Sl. No.	AUTHORITY	COPRRRESPONDING DUTIES
1.	Central Pollution Control Board	<p>(1) Operation and maintenance of Extended Producer Responsibility Portal and monitoring of Extended Producer Responsibility compliance.</p> <p>(2) Coordination with State Pollution Control Boards</p> <p>(3) Prepare and issue guidelines and Standard Operating procedures for collection, storage, transportation, segregation, refurbishment, dismantling, recycling and disposal of e-waste under these rules from time to time, and also issue necessary Forms/ Returns for implementation of these rules.</p> <p>(4) Conduct random check for ascertaining compliance of the e-waste rules and may take help of Customs/State Government or any other agency (ies).</p> <p>(5) Documentation, compilation of data on e-waste and uploading on websites of Central Pollution Control Board.</p> <p>(6) Actions against violation of these rules.</p> <p>(7) Conducting training programmes to develop capacity including State Pollution Control Boards and Urban Local Bodies officials.</p> <p>(8) Conducting awareness programmes on e-waste management, RE/CE label, legislation to make consumers responsible towards product usage and safe disposal.</p> <p>(9) Integrate all stakeholders with the centralized digital system.</p> <p>(10) Submit Annual Report to the Ministry.</p> <p>(11) Enforcement of provisions regarding reduction in use of hazardous substances in manufacture of electrical and electronic equipment.</p> <p>(12) Interaction with IT industry for reducing hazardous substances.</p> <p>(13) Set and revise targets for compliance to the reduction in use of hazardous substance in manufacture of electrical and electronic equipment from time to time.</p> <p>(14) Ensure RoHS compliance and its certifications through a recognized lab and its mandatory checks.</p> <p>(15) Any other function delegated by the Ministry under these rules from time to time.</p>
2.	State Pollution Control Boards or Pollution Control Committees of Union territories	<p>(1) Inventorisation of e-waste.</p> <p>(2) Monitoring and compliance of Extended Producer Responsibility as directed by Central Pollution Control Board.</p> <p>(3) Conduct random inspection of recycler and refurbisher and monitoring recycling capacity utilization.</p> <p>(4) Implementation of programmes to encourage environmentally sound recycling.</p> <p>(5) Any other function delegated by the Ministry/ Central Pollution Control Board under these rules.</p>
3.	Responsibilities of Local Bodies (Urban and Rural)	<p>(1) To ensure that e-waste if found to be mixed with Municipal Solid Waste is properly segregated, collected and is channelised to registered recycler or refurbisher.</p> <p>(2) To ensure that e-waste pertaining to orphan products is collected and channelized to registered recycler or refurbisher.</p> <p>(3) To facilitate setting up e-waste collection, segregation and disposal systems.</p> <p>(4) Conducting training sessions to develop capacities of the urban and rural local bodies.</p>
4.	Responsibilities of Port authority under Indian Ports Act, 1908 (15 of 1908) and Customs Authority under the Customs Act, 1962 (52 of 1962).	<p>(1) Verify the import or export with respect to Extended Producer Responsibility under these rules.</p> <p>(2) Inform Central Pollution Control Board of any illegal traffic for necessary action.</p> <p>(3) Take action against importer for violations under the Indian Ports Act, 1908 or the Customs Act, 1962.</p>
5.	Responsibilities of Bureau of Indian Standards/ Ministry of Electronics and Information Technology	To issue standards for refurbished products. Bureau of Indian Standards/ Ministry of Electronics and Information Technology shall also develop guidelines for refurbishers with respect to Compulsory Registration Scheme.

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Flow Chart for EPR:



** For Collection Point Detail's Please refer to Annexure-A

Approved By: Santosh Agnihotri

Collection Points from where End of Life lamps to be collected						
S.No.	State	City	Depot Address	Contact person	Email	Phone
1	ASSAM	GUWAHATI	Ground Floor ,K P Patta No.899 of Revenue Village Neelakshi Talukdar Campus Opp Vodaphone head office NH37 Katabari Guwahati Kamrup Metropolitan Assam 781035	Sujit Singh	sujit.singh@orientelectric.com	9007056591
2	WEST BENGAL	KOLKATTA	Jalan Industrial Complex,Gate No-3, Lane No-5, Dag No-999,1003,1006,1007,1008, Mouza-Sakaridaha, Ps – Domjur, JL no. 22, Howrah - 711411			
3	ODISHA	CUTTACK	Badadhanpur, Puri Bypass road, Bhubaneswar 751002, Odisha			
4	BIHAR	PATNA	Tauji No. 227,Thana No. 14, Mouja pahadi,Badi Pahari Land mark New bus stand, khasra No. 1323 Khata No. 94,Patna 800007			
5	JHARKHAND	RANCHI	Khata No 108 Plot 350 village lai gutuwa Thana nagari Ranchi 835303			
6	PUNJAB	JALANDHAR	Khasra No.10/18 and 10/19, opp.Lovely professional University, GT Road NH-1, Phagwara, villageGT Road NH-1, Phagwara, village-Saprod, Tehsil Phagwara, Distt,Kapurthala, 144401	Azharul	azharul.hassan@orientelectric.com	9674747975, 8882179532
7	DELHI	DELHI	Kasra No..85/23, MIN 1-04, Village Mundaka,Delhi, 110041			
8	UTTAR PRADESH	GHAZIABAD	Hatipura Khara Tehsil Dadri Gautam Budh nagar Khasra 136 Majra Village Acheja Near KRB rice mill Pin 203207			
9	RAJASTHAN	JAIPUR	Bansal Conductor Pvt Ltd C-179, Road No. 9J VKI Area Jaipur			
10	JAMMU AND KASHMIR	JAMMU	Ayush Agencies, Ward No.57 Opp Amar Flour Mills, Preet Nagar, Nanak Nagar,Gangyal, Jammu-180004			
11	UTTAR PRADESH	LUCKNOW	C-518 Near Parking No.09, Transport Nagar Kanpur Road Lucknow 226012	Anandan K	anandan.k@orientelectric.com	9043891841
12	HARYANA	KUNDLI	Kewat no.1378 Kila No 22/2 Rectangle No 94 Khataoni No.1974 Situated at Murthal Tehsil Sonapat Haryana 131027			
13	KARNATAKA	BANGLORE	Sy No-88/4,5,6 & 7 Beside MRF Tyre Showroom Dasanapura, Tumkur – Bangalore highway Road Bengaluru - Karnataka – 562162			
14	KERALA	COCHIN	Sy.no.21/4-3,21/4-6, Aluva east villa Erumathalakkara, Ashokapuram P.O Aluva Ernakulam -683101- Kerala.			
15	TAMILNADU	CHENNAI	Door No.8/166 Uppirapalayam Raod EdappalayamAiamathiGroup 1Revenue Village Ponneri Talkuk Thiruvallur District , Chennai, Tamilnadu- 600052			
16	TELENGANA	HYDERABAD	Survey No. 28 and Survey No. 29 situated at Bongloor Village, Ibrahimpatan Mandal, Ranga Reddy District, Hyderabad, Telangana	Rameshwar T Nipane	meshwar.nipane@orientelectric.co	9004964698
17	ANDHRA PRADESH	VIJAYWADA	23-17/1, Kohinoor Estates,Opp: Hill, besides Amazon Godown,Mylavaram Road,Kondapalli – 521228.			
18	GUJARAT	AHEMDABAD	Survey No 102-2 Kazipura NH 64 Ta & Dist Kheda Gujarart 387530.			
19	MAHARASHTRA	BHIWANDI	UNIT No 1 to 5 Building A-8, GREEN SPACE MUMBAI NASIK HIGHWAY, GREEN SPACE MUMBAI NASIK HIGHWAY Vill VAHULI taluka Bhiwandi, Taluka Bhiwandi, Vahuli, Thane, Maharashtra, 421101			
20	MAHARASHTRA	NAGPUR	Survey/ Khasra 175 ground floor Bodhada Road nr Hiranwar Farm Mauza lava Tahsil nagpur Gramin Nagpur Maharastra 440023			
21	CHATTISHGARH	RAIPUR	1, GD Warehouse, Opp. Reliance Petrol Pump, Bhanpuri, Raipur, Chattishgarh-492005			
22	MADHYA PRADESH	INDORE	Orient Electric Limited, MR-11, Mangal Compound, 4, Pipliya Kumar, Ring Road, INDORE - 452 010 (Madhya Padesh)			

INFORMATION ON CFL AND ITS SAFE DISPOSAL

What is mercury, its sources, mercury emissions, and the risks?

Mercury is an element found naturally in the environment. Mercury emissions in the air can come from both natural and man-made sources. Utility power plants (mainly coal-fired) are the primary man-made source, as mercury that naturally exists in coal is released into the air when coal is burned to make electricity.

Airborne mercury poses a very low risk of exposure. However, when mercury emissions deposit into lakes and oceans, they can transform into a highly toxic form that builds up in fish. Fish consumption is the most common pathway for human exposure to mercury. Pregnant women and young children are most vulnerable to the effects of this type of mercury exposure. However, it is estimated that most people are not exposed to harmful levels of mercury through fish consumption.

Why do CFLs contain mercury?

Mercury is an essential ingredient for most energy efficient lighting products, including CFLs. It is the mercury that excites phosphors in a CFL, causing them to glow and give light. When electric current passes through mercury vapor, the mercury emits ultraviolet energy. When this ultraviolet energy passes through the phosphor coating, it produces light very efficiently. Because mercury is consumed during lamp operation, a certain amount is necessary to produce light and achieve long lamp life.

How much mercury does one CFL bulb contain?

The amount of mercury in the most popular and widely used CFLs is minimal, ranging between 6 mg to 3.5 mg. Though some CFLs contain mercury higher than 6 mg, the Bureau of Indian Standards, Government of India is preparing standards to ensure that minimum qty. of mercury is used in CFLs and other fluorescent Lamps. The 5 mg, is roughly equivalent of the tip of a ballpoint pen.

And how much mercury does a thermometer contain?

By comparison, older home thermometers contain 500 milligrams of mercury and many manual thermostats contain up to 3000 milligrams. It would take between 100 and 665 CFLs to equal those amounts.

How is mercury inserted into CFL?

Mercury can be added to the CFL in two ways. Some manufacturers use liquid mercury, which is less expensive and more difficult to accurately dose. These CFLs may contain a very high quantity of mercury.

Others use amalgam, a small "pill" which is a solid state form of mercury and other elements. Amalgam is inserted through automatic machine and is much easier and more accurate to dose. Such lamps contain much less than 3.5 mg.

How safe it is to use CFL in homes?

CFLs are safe to use in your home. No mercury is released when the bulbs are in use and they pose no danger to you or your family when used properly. Since 2011, industry has shifted to pill insertion which is safer. It does spill or evaporate when the lamp is broken. However, in case a lamp is using liquid mercury and the lamp breaks accidentally, please follow suggestions given below:

What should be done if a CFL breaks?

If CFL breaks- carefully sweep up all the fragments, wipe the area with a wet towel, and dispose of all fragments, including the used towel, in a suitable sealed disposable bag. Follow all disposal instructions. If possible, open windows to allow the room to ventilate. Do NOT use a vacuum.

How to safely dispose of a CFL when it burns out?

It is best to recycle your CFL. The Ministry of Environment and Forest has prepared guidelines on safe disposal and recycling of mercury from used lamps. Central Pollution Control Board in association with Lighting Industry will implement the guidelines. Under these guidelines, one of the important factors for action is decided to appoint "Lamp Recycling Units" (LRUs). Very soon burnt CFL and Fluorescent Lamps will be collected from consumers and transported to the LRUs. These LRUs will use very highly sophisticated machinery to retrieve each part of lamp, like mercury, phosphor powder, glass, plastic etc, and sent back to factories for reuse.

For the time being, unbroken CFL bulbs, can be put in a suitable disposable bag and handed over to the garbage collector personally, informing him that the bag contains CFL lamp. It is proposed that Local Municipal authorities should arrange to inform and train the garbage collectors about mercury safe handling. Till the recycling system is put into place, the local civic authority should provide a specified safe dumping place (preferably a concrete well) which will be sealed once full.

What steps are being taken to reduce the amount of mercury in CFLs?

The Bureau of Indian Standards has amended the existing CFL Standard IS15111 by fixing mercury limit to less than 5 mgs in CFLs of less than 26 watts. Industry has taken a further step to reduce it to less than 3.5 mg by end of 2014. This has been made possible by using pill insertion of mercury amalgam. The mercury amalgam in solid form is much

more safer because even when the lamp breaks accidentally, it will not spill or evaporate into the atmosphere and very easy to handle. Because this standard is mandatory, no manufacturer will be allowed to use mercury in CFL more than the prescribed level

Are CFLs good for the environment?

CFLs are responsible for less mercury than standard incandescent light bulbs, and actually work to prevent mercury from entering our air, where it most affects our health. The highest source of mercury in our air comes from burning fossil fuels such as coal, the most common fuel used in India to produce electricity. A CFL uses 75% less energy than an incandescent light bulb and lasts up to 8 to 10 times longer.

70% of power plants are coal fired and thus burn fossil fuel to produce energy. These power plants will emit 10 mg of mercury to produce the electricity to run an incandescent bulb compared to only 2.4 mg of mercury to run a CFL for the same time.

ADC Amber SVG Converter Trial version: <http://www.processitest.com/abcsvg.html>

Mercury emissions by light source evaluated over a five-year life

