E-WASTE (MANAGEMENT) RULES, 2015 – A CRITICAL ANALYSIS

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Abstract: After floating proposed draft rules for "Management and Handling of Waste Electrical and Electronic Equipment" for public debate and suggestions in May 2010, Ministry of Environment and Forests, Government of India has published the interim rules on May 2011 followed by publication of draft rule set on June 10, 2015 in Gazette of india. These guidelines have been published under the aegis of Environment Protection Act, 1986. In this communication, attempt has been made to critically examine the provisions of e-waste (management) rules enacted effective from August 10, 2015.

Keywords: *e-waste, WEEE, MoEF, recycle, reuse.*

I. INTRODUCTION

Primarily owing to its sheer size and exponential growth in the electronics equipment consumption, India faces the problem of handling and management of electronic and electrical gadgets which have lived their life. Short life span of electronic equipment and obsolecense marketing strategies of corporates add fuel to the fire. Till recently, the supply chain management of waste electrical and electronic equipment (WEEE) was governed by (1) The Municipal Solid Wastes (Management and Handling) Rules, 2000, and (2) Hazardous Wastes (Management and Handling) Rules, 1989, as amended in 2000 and 2003. In May 2010, the Ministry of Environment and Forests, Government of India published for public debate the draft rules for "Electronic Waste (Management and Handling) Rules, 2010" [4].

On June 10, 2015 and in exercise of the powers conferred by sections 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), in supersession of the e-waste (Management and Handling) Rules, 2011, published in the Gazette of India, Part II, Section 3, Sub-section 3(ii), vide number S.O.1035(E) dated the 12th May 2011 [4].

E-waste management in India lacked a sound legislative framework and also is not backed by a sound technological framework for proper disposal/recycle. There are two facets of e-waste disposal – health hazards and economical. Presently, the informal recyclers - referred to as 'kabadiwalas' – treats about 90% of the e-waste management in India. They are primarily involved in the dismantling rather than recycling disposed products. Formal reverse supply chain management of e-waste did not happen until 2004 and did not pick up until 2014 [9].

Now, with the e-waste rules of 2015, the Govt. has tried to place a clear legal framework for e-waste collection and recycling. These rules have introduced the concept of extended producer responsibility (EPR) to ensure producers finance the collection and recycling of e-waste. This financing may involve a hike in selling price of electrical and electronic equipment [8].

II. SALIENT FEATURES OF E-WASTE RULES, 2015

A. SCOPE

These rules apply to manufacturers, producers, bulk and individual consumers, collection centres, dealers, refurbishers, dismantlers and recyclers involved in manufacture, sale, transfer, purchase, collection, storage and processing of waste electrical and electronic equipment including the components therein, consumables and spare parts which make the product operational. These rules do not apply to batteries and radioactive wastes [8].

B. KEY PLAYERS AND THEIR RESPONSIBILITIES

This subsection briefly discusses various stakeholders and key players and their responsibilities. Stakeholders in e-waste value chain include manufactures, producers, consumers, recycler - informal and formal, regulatory bodies – CPCB/SPCBs/PCCs, industry associations – MAIT, NASSCOM, ACM, IEEE, research institutions, NGOs – Greenpeace, EPA. The following paras describe the responsibilities of different palyers.

1. Responsibilities of the Producer [8]

The producer of electrical and electronic equipment shall be responsible for implementing the Extended Producers Responsibility. Producers are required to collect and channelise to dismantlers/recyclers the e-waste generated from the end-of-life of their products, individually or collectively with other producers. Further, they are required to finance the establishment –individually or collectively – of facility for environmentally sound management of e-waste generated from the 'end of life' of its own products. They also have to maintain records of the e-waste handled by them and file

annual returns to the CPCB/SPCB/PCC concerned by June 30 of the next financial year.

2. Responsibilities of Manufacturer [8]

The manufacturer of electricl and electronic equipment have to collect and channelise the e-waste generated during the manufacturing process. They also have to maintain records of the e-waste handled that was generated as a result their manufacturing pocess and file annual returns to the CPCB/SPCB/PCC concerned by June 30 of the next financial year.

3 Responsibilities of Collection Centers [8]

The collection centres have to store the e-waste collected by them in an environmentally safe and secure manner till the time it is sent to registered dismantler/recycler. They also have to maintain records of the e-waste collected by them and make it available to the CPCB/SPCB/PCC for scrutiny.

4. Responsibilities of dealers [8]

A dealer shall provide collection bins for consumers to deposit e-waste and safely transport it to the poducer or registered collection centre. Further, each registered dealer shall submit details of e-waste collected and file annual returns to the CPCB/SPCB/PCC concerned by June 30 of the next financial year.

5. Responsibilities of Refurbisher [8]

Refurbishers have to collect e-waste generated during refurbishment and channelise it to the registered collection center or dismantler or recycler; submit details of e-waste generated to the concerned PCB on yearly basis; annual returns to the CPCB/SPCB/PCC concerned by June 30 of the next financial year.

6. Responsibilities of Consumer [8]

Consumers of electrical and electronic equipment have to ensure that e-waste generated by them is channelised to authorised collection center or registered dismantler or recycler or is returned to the take-back services of the producers; and of them the bulk consumers have to maintain records of e-waste generated by them and file annual returns to the CPCB/SPCB/PCC concerned by June 30 of the next financial year.

7. Responsibilities of Dismantler [8]

Every dismantler have to ensure that its storage, transportaion and dismantling processes are environmently sound and safe; dismantled e-waste are segregated and sent to the registered recycling facilities for recovery of materials; non-recyclable or non-recoverable components are sent to authorized treatment/disposal facilities; file annual returns to the CPCB/SPCB/PCC concerned by June 30 of the next financial year.

8. Responsibilities of Recycler [8]

E-waste recyclers shall ensure that their recycling processes are environmently safe; keep record of the recycled e-waste; residue generated during recycle is disposed of in an authorised common hazardous waste treatment/disposal facility; file annual returns to the CPCB/SPCB/PCC concerned by June 30 of the next financial year.

III. DISMANTLERS AND RECYCLERS IN INDIA

Chapter II of the e-waste (management) rules, 2015 – among other things- manadates that every dismantaler and recyclers shall get itslf regsitered with state pollution control bord or pollution control committee, as the case may be. Central Pollution Control Board of India (CPCB) has compiled a compiled a consolidated list of dismantlers/recyclers registered in 12 states of Indian union. Contents of Table 1. below have been adapted from Rajya Sabha website [7].

Table I. Sate-wise number/capacity of registered recyclers and dismantlers as on 14.10.2015 [7]

S.No.	Name of the state	No. of registered recyclers/dismantlers	Recycle capacity in metric ton annum (MTA)
1	AP	2	11800
2	CG	2	1650
3	GJ	7	20849.12
4	HR	14	49385
5	KA	52	50318.5
6	MH	24	32610
7	MP	2	6585
8	RJ	9	67470
9	TN	16	111931.08
10	UP	17	79860
11	UK	3	28000
12	WB	1	600
TOTAL as on 14.10.2015		**149**	**461058.7**
TOTAL as on 27.11.2014		**138**	**399154.6**

According to [1], a United Nations University report "Global E-Waste Monitor 2014" India was the fifth largest contributor in global e-waste only behind the United States, China, Japan and Germany. It produced 1.7 million ton (17 lac ton) of electrnic waste in 2014 as compared to its installed e-waste recycling and dismantling capacity of only about 4 lac ton as on November 27, 2014. India e-waste rules, 2015 treats WEEE and RoHS identically in terms of scope, exclusions etc, and there is a considerable similarity with the EU WEEE and RoHS legislation, although these are treated as totally separate legislation in the EU [1].

IV . WEEE AND ROHS - EU VS. INDIA

India RoHS restricts the hazardous substances at the same maximum concentrations as in the EU and China, but the

scope of products, enforcement, penalties and compliance procedures are different as outlined in table below. Furthermore, a little information is provided in the Indian e-waste rules 2015 in respect to compliance procedure. The table below shows the main similarities and differences between legislation adopted in India and the EU [8].

Table II. WEEE and RoHS comparison between India and European Union [8]

Aspect	EUROPIAN UNION	India
Legislation	Separate for WEEE and RoHS	Joint for WEEE and RoHS
Legal Responsibility	Producers; Distributors; Business end users; Treatment facilities for WEEE; Exporters of WEEE	Producers; Consumers; Collection centres; Dismantlers; Recyclers
Business size affected	All sizes in the categories above	Small & micro enterprises exempted
Scope	Large and small household appliances; IT and telecomm equipment; Consumer equipment; Lighting equipment; Electrical and electronic tools; Toys, leisure and sports equipment; Automatic dispensers; Medical devices.	IT & Telecomm Equipment; Consumer electrical & electronics equipment; Large Household Appliances: Refrigerators, Washing machines, Air conditioner; Consumer Equipment.
Out of Scope	1. Military equipment 2. Equipment designed to be sent into space 3. Part of another type of equipment that is out of scope 4. Large-scale stationary industrial tools 5. Large-scale fixed installations 6. Transport 7. Non-road mobile machinery for professional use 8. Active implantable medical devices 9. Photovoltaic panels 10. R&D equipment for B2B only	1. Batteries 2. Radioactive waste 3. Micro & Small Enterprises as defined under the Micro, Small & Medium Enterprises Development Act, 2006 4. Military & National Security 5. Electricity not primary power source 6. Primary function does not need electricity 7. Part of another type of equipment that is out of scope 8. Batteries
Enforcement	By national enforcement bodies	Not specified
Penalties	Fines and costs, plus imprisonment in some EU States.	Not specified
Compliance approach	WEEE – MS individually interpret the directive, requirements vary considerably and include registration, membership of compliance schemes RoHS – EU-wide consistent interpretation, although there are some areas where EU States have different interpretations. Compliance by self-declaration using documentation	WEEE: Application to the State Pollution Control Board or local Pollution Control Committee RoHS: The approach is unclear for RoHS but it is required to include information on RoHS substances in instruction manuals.

V. CONCLUSION

The Government has notified e-waste (Management and Handling) Rules, 2011 under Environment (Protection) Act, 1986 for environmentally sound management and disposal of e- wastes generated in the Country. To make these rules more effective, the Ministry of Environment & Forest has undertaken a comprehensive review of e-waste management rules, 2011 and has notified the revised draft rules during June 10, 2015 inviting public objections and suggestions.

The draft e-waste (management) rules, 2015 include extended producer responsibility, setting up of e-waste collection and channelization mechanism and e-waste exchange. Further, specific responsibilities have been assigned to various players on the arena - bulk consumers, producers, manufactures, collection centres, refurbishers, recyclers, dismantlers of electronic products for safe disposal.

Providing a legal framework for environment friendly management of e-waste apart, a lot needs to be done towards making the masses aware about the very nature of e-waste and need for its scientific disposal. Further, looking at the wide gap of recycle capacity of the country and its own e-waste generation plus the transnational e-waste it receives from west, it becomes imminent on part of govt. to facilitate by way of subsidizing the establishment of e-waste recycle facilities.

Additionally, the permitted level of use of lead, mercury, cadmium and chromium in non-exempt category products is at par with international standards (Pb<100ppm; Hg<100ppm; Cd<1000ppm; Cr<1000ppm), but in most cases no time limit has been specified in respect to use of these hazardous materials in manufacture of exempt category of products.

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