

# E-Waste Law: New Paradigm or Business as Usual?

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The new e-waste rules notified by the government are an important step forward. However, loopholes which allow producers to evade their responsibility and the informal sector to evade environmental and health controls need to be addressed. It is also important to create mass awareness and make it easier for the consumer to dispose e-waste. Policy should encourage cooperation rather than competition between those responsible for disposing e-waste.

On 1 May 2012 the new e-waste rules notified by the Ministry of Environment and Forests (MOEF 2011), Government of India came into force. They mandate requirements for e-waste disposal by all consumers, producers, importers and traders of electrical and electronic equipment (except those in the micro- and small-scale sector) in India. By doing so, India became one of the few select developing countries, which have such a law in place. The rules aim to manage over 8 lakh tonnes (Central Pollution Control Board [CPCB], 2012) of toxic but very lucrative e-waste currently generated in the country. This is expected to double in the coming decade. Considering that over 95% of the e-waste is currently recycled in small, informal, diverse and distributed operations (almost always with detrimental impacts on human health and the environment), forcing this economy to shift to a safer and more accountable system is in itself a daunting task.

The rules were notified eight years after a report (Toxics Link 2003) highlighted the issue. They are path-breaking in many ways, but severely deficient in others. They incorporate progressive principles like extended producer responsibility (EPR) and removal of hazardous substances (ROHS), which envision waste not as an isolated municipal problem but as part of a product's life cycle. However they also shy away from some key issues – incorporating the informal sector, e-waste imports, disposal of mercury containing lamps, setting collection targets, etc.

Even in the short time since they have been in force, there have been implementation slippages. The rules notified in May 2011, provided a window of one year to enable the stakeholders to prepare. However, despite the grace period, little has been done, especially by the main stakeholder – the producer. In fact a new guideline currently being

prepared by the MOEF to help interpret the Rules, already seems like an attempt to dilute the responsibility of industry in this matter (CPCB 2012).

## E-waste and Its Toxicity

E-waste is a collective term used for end of life electronics and electrical equipment. Various countries have included different consumer goods in this definition. In India the bulk of the e-waste comes from computer, mobile phone and related devices. Alongside, other white goods include television sets, washing machines, refrigerators, etc, besides fluorescent tubes, which contain mercury. These electronic and electrical equipment contain valuable materials like copper, gold, silver, platinum palladium, plastics and glass. They also harbour over 50 toxic elements. If released, these can cause long-term, even inter-generational health problems, including neurological and endocrinal disorders, or cancer. The toxics include mercury, arsenic, lead, chromium, chemicals like brominated flame-retardants, polychlorinated biphenyls (PCBs) and the ozone depleting chlorofluorocarbons (CFCs). Some-wastes, such as polyvinyl chloride (PVC) coated copper wires, emit highly poisonous gases like dioxin and furans when burnt. Many of these toxics are now internationally restricted or even banned.

Occupation exposures from e-waste processing are high, especially in the informal sector, which employs underpaid men, women and children and does not follow any environmental standards even though profits can exceed 150% of the price of e-waste. The impact on workers is high as they handle strong acids (finally thrown into gutters) to strip circuit boards of copper, use mercury for recovering gold from microprocessors, or burn PVC plastic wires to recover aluminium and copper, etc.

The e-waste products range from those, which have high hazard and a high resource value (like computers, mobiles, TV sets, etc) to those, which have high hazards but low recoverable value – such as refrigerators (containing CFC gases) and mercury-based lamps. While the recycling market is keen to corner the first type, since they have a

positive funds flow, it needs incentives and fiscal instruments like a recycling fee to sustain safe treatment of the second category.

### Collection Infrastructure

Computers, mobiles and related devices in particular, have global supply chains, controlled by large multinational brands. However, when it comes to waste disposal they often avoid taking initiatives in developing countries. Managing e-waste in developing economies need specific approaches owing to the involvement of the urban poor in recycling, the existence of a large grey market for products, flexible labour costs, weak labour and environmental regulations, low consumer awareness and poor infrastructure. While international (western) experiences provide useful guidance, there is dire need for context-specific models. For example, in India consumers currently expect to be paid (even if nominally) for giving away old computers, while in Europe they are willing to be charged an Advanced Recycling Fee (ARF), which has a direct impact on cost structures. Hence, implementing such as system here will require an innovative long-term and enabling approach, which our regulatory agencies are not adept at.

One of the key provisions in the rules is the incorporation of producers (manufacturers) as those who have the main responsibility through EPR. Producers now are required to set up, directly or indirectly, the e-waste collection infrastructure (including setting up collection bins in each area), finance it and ensure its operations.

In fact, producers are not allowed to even sell their products without registering under the EPR regime. The intentions are noble – to install an e-waste management infrastructure as part of the product cost and to help recovered materials flow back into the production chain. Other less direct objectives are to influence sustainable design for cleaner and longer lasting products.

Besides a lack of experience and the non-availability of baseline information, there are several other impediments to the implementation of EPR in India, but

primarily a lack of understanding of how it should work.

### Cooperation or Competition?

The primacy of the producer is the key for the success of EPR. The downstream recycling chain has collection centres, dismantlers and recyclers. Normally e-waste must flow down this green channel, and be tracked as it passes through it. The financial and the legal liabilities go along with this. If instead the e-waste unaccountably enters the channel at multiple points, the system breaks down. Unfortunately in India, each actor is also being permitted (by each state pollution control board) to collect waste independently.

This is causing distortions. For example, recyclers collecting e-waste directly from the market have been shopping around in the informal sector, using the permit as their licence to do so. In some cases they have been subcontracting the material back to the informal sector for recycling, ending up in effect being dependent on the informal sector both ways. Further, if the producer were to charge an ARF from the consumer, it now has no system to keep track of if, when and by whom the product has been recycled.

Attracted by the seemingly higher profitability of e-waste, over 90 recyclers have already received authorisation from the government but with no assessment of an overall capacity requirement or its geographical distribution, or with no connection with the proposed EPR-based green channel. Since each facility can require an investment of many crores of rupees (as distinct from less than a few lakh rupees in the informal sector), there is a motivation by the recycler to corner waste to make quick profits. However this equation can change, as new costs will emerge with the rules in place and e-waste recycling profitability can easily be squeezed in the near future. When that happens, the lack of a functioning unified green channel of waste will be sorely felt.

Hence both the informal sector and the formal sector are distorting the EPR system in different ways – one by sucking the e-waste in, or by acting as subcontractors to the main recyclers, and the other by acting independently from

the producer. What should have been a cooperative chain working in tandem, starting with the responsibility of the producer, is becoming a chain of competitive actors making accountability difficult. The producers too seem content at this situation, and none has as yet taken any initiative to fulfil its legal obligations under the rules.

Creating cooperation by integrating the informal sector into the new regime is very important. Unfortunately, there have been no lessons learnt from the Lead Acid Battery Rules (MOEF 2002), which mandated EPR as well, but was unsuccessful in diverting batteries away from informal smelters. Those, whose livelihoods were at stake, proved to be more adept at surviving. Yet in the rules no provisions have been made for informal sector participation and any initiative being taken in this regard has been by waste-picker cooperatives or non-governmental organisations (NGOs) on their own. This deficiency could prove to be the Achilles heel of the rules.

Internationally, cooperative systems have been formed through producer responsibility organisations (PROs) or through individual producer responsibility (IPR). These are owned by all major stakeholders jointly, and are solely responsible, contractually, for organising the green channel, including collection, dismantling, proper recycling and final disposal. Funding is through contributions by the partners, as well as by fees collected from consumers, and is publicly accountable. Any profits made, contribute towards the sustainability of the organisation, and is not for individual actors alone.

### Imports

Imports, both legal and illegal, are detrimental to the EPR system. Illegal imports are directly injected into the informal sector while legal imports reduce the incentive to collect domestic e-waste.

Imports are the result of pressures from high e-waste generation countries (in Europe, the United States, Japan) to export their e-waste to developing countries. Since the cost of waste disposal and treatment there is high, it has provided an incentive to export to countries like India, China and to Africa with lower

labour costs and weak environmental standards. A computer, for example, which could cost up to \$20 to recycle in the US, is sold for \$15 to Indian traders, marking an inflow of over \$35. By estimates, India imports more than 50,000 tonnes of e-waste annually, and traders make the most profit. Toxics Link tracked over 40 bills of entry of materials wrongly marked “mixed metal scrap”, to illegal e-waste imports. Misdeclaring e-waste, fudging its origins (from say west Asia rather than Europe or the US) to bypass international law (Basel Convention) and auctioning the items in India to the informal sector has been the practice followed. E-waste also comes in as second-hand goods or into export promotion zones (EPZ).

Precious little has been done to prevent these flows. While the earlier drafts of the rules proposed a ban on e-waste imports, for some inexplicable reason this was removed. On the contrary in 2011, licences were issued to allow the import of 8,000 tonnes of e-waste by one recycler. Such mixed policy signals also threaten to convert India into an e-waste dumping site.

### Other Implementation Challenges

**Cumbersome Authorisations:** The rules stipulate that the producer will have to take authorisation from all the 27 state pollution control establishments. All down-the-chain actors, namely, collection centres, dismantlers and recyclers, also need separate authorisation from the state boards. It could be a case of over-regulation, where all that was needed was a central registry, at least for producers, as exists elsewhere, while recyclers and others could be authorised at the state level.

**Targets:** Recycling targets are essential for monitoring progress and improving compliance. In Europe targets have been set for per capita e-waste collection. However in India, the industry has staunchly resisted the setting of targets citing a lack of baseline data. While targets must be set up in a practical manner, the role of targets is crucial and must be incorporated.

**Information Transparency:** It is essential that the utilisation of any funds collected by the recycling system, especially from consumers, should be publicly accountable, since such funds need to be used for recycling and nothing else. Also recycling information must be provided to the consumer at the time when new products are purchased.

**Consumer Awareness:** Adequate and widespread information to the consumer, both about the hazards of e-waste, especially if it is not disposed properly, as well as information on authorised collection centres and recyclers, underpins the whole system. Though the rules designate the producers to do this task, it should be shared by the state and other stakeholders. Producers must be required to designate specific funds towards this, and extend awareness not only to large cities but also to peri-urban and rural consumers.

Also to deepen the messages in both rural and urban areas, schools and universities should be drawn in, and the state can help by involving education and consumer affairs sectors.

**Leakages Back to the Informal Sector:** There are other several ways in which e-waste can “leak” back to the informal sector. Proposed unmanned collection bins, mobile collection centres, bulk auctions by large consumers, grey market products, illegal imports, or simply higher prices offered by them to “suck” the waste back into their hands are a few. These loopholes need to be constantly identified and closed.

**Regulation and Monitoring:** Regulation remains the weak point in all environmental legislation in the country. In this case, by incorporating EPR, an attempt has been made to share the responsibility of implementation with the private sector. However strict monitoring of progress and implementation of the rules will remain crucial to how the system develops.

**Other Issues:** The role of municipalities needs to be enunciated better. Since each urban area needs collection bins, etc, this cannot be done without their

involvement. Similarly civil society organisations, NGOs, waste-picker cooperatives, etc, need to be made aware of the rules. Also with growing rural computerisation and with the penetration of computers, mobiles and televisions in the country, a link needs to be made with all such programmes and e-waste disposal. Finally, the issue of historic waste and “free riders” in the system have not been tackled in the rules.

A final challenge is to make future devices like computers and mobiles “cleaner” such that they do not contain toxic materials in the first place, along with incentives for encouraging designs that allow for longevity and lead to a reduction of waste generation. The rules mandate this, and it needs to be monitored strictly. There are already RoHS rules in place in the European Union, which allow market access only to those devices that meet these standards. The question of influencing design is more complicated and less certain, even though this is one of the objectives of EPR.

### Conclusions

The success of the take back e-waste system, as proposed in the rules, will have to be based not merely on policing, but creating an interlinked system of collection, dismantling and recycling, with the producer in-charge, whilst monitoring progress, transparency and ensuring compliance.

A proper understanding of EPR systems, combined with increased consumer awareness, is crucial. Else we could end up with the rules merely legitimising a new set of formal sector operators, such as traders and recyclers, who then officially corner the e-waste stream, making the most profits. On the ground this could then remain business as usual, with little positive impact on health or the environment.

### REFERENCES

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