

E-waste control measures

- Need for stringent health safeguards and environmental protection laws in India
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Need for stringent health safeguards and environmental protection laws in India

- Environmental activists opine that environment protection laws in India are not stringent enough to address the issues relating to either domestic waste or imports of hazardous waste including e-waste.
- We do not have appropriate technology to ascertain the quantum and quality of wastes in the imported items.
- For instance, it has been reported that the problem of toxic waste imports cannot be addressed properly as none of the Indian ports (except the Jawaharlal Nehru Port at Nhava Sheva) has scanners to detect the actual contents of the consignments.
- There are expectations that the proposed E-waste (Management and Handling) Rules, 2010 will lay down explicit laws concerning e-waste and systematize various aspects of the e-waste recycling sector.

Need for stringent health safeguards and environmental protection laws in India

- The Government has consulted various non- governmental organizations (NGOs) in the process of developing a dedicated set of rules, which would govern the management and handling of electronic and electrical waste.
- Draft rules on e-waste management were jointly proposed and submitted to the Government by the Manufacturers' Association for Information Technology (MAIT).
- It is necessary that the legislation is clear in laying down the responsibility of every shareholder in the management of waste—from the producer to the consumer and the recycler.
- Besides, any legislation to be effective requires clear specification of the mechanisms to carry out each function.
- Strategies have been proposed for the effective management and handling of e-waste in the country, many of which are already in force or in consideration in the EU countries and other developed countries like the U.S. and Japan.

Need for stringent health safeguards and environmental protection laws in India

- Considering the rapid growth of generation of e-waste, the MoEF (Ministry of Environment Forest climate change) has proposed to notify separate Rules on e-waste under the Environment (Protection) Act, 1986.
- The salient features of the proposed Rules in brief, provided by the MoEF, are as given below:
 - (i) The concept of Extended Producer Responsibility (EPR) has been enshrined in the proposed Rules.
 - (ii) The rules propose to extend producers' responsibility to the post-consumer stage of the product life cycle and fix their responsibility for collection of end of life products and to ensure that such wastes are channelized for safe handling. In addition, Producers are required to finance, and organize a system to meet the costs involved in the environmentally sound management of e-waste generated from the 'end of life' of their own products and the historical waste available on the date from which these rules come into force.

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- (iii) Producers, as necessary, can designate agencies to set up an effective take back system for all electrical and electronic equipment at the end of their life.
- (iv) The threshold limits prescribed in EU RoHS (Restriction of Hazardous Substances Directive) Directive, which is globally accepted standard for the hazardous substance used in manufacture of electrical and electronics components have been adopted.
- (v) Rules also provide for granting authorization and registration by the State Pollution Control Board or the Pollution Control Committee concerned, to a persons/agency engaged in collection or dismantling or recycling of e-waste; provided that the applicant possesses appropriate facilities to handle e-waste safely. This is to ensure management of e-waste in an environmentally sound manner.
- (vi) Collection Centres, which are being run by individuals/ jointly or by agencies will be required to take authorization from respective State Pollution Control Boards/Committees and file annual return thereafter providing details of e-waste collected. Dismantlers and recyclers will have to obtain authorization and registration from the concerned State Pollution Control Board and file annual return regarding e-waste handled by them.

Extended Producers Responsibility (EPR)

Extended Producers Responsibility (EPR):

- The principle of the Extended Producers Responsibility (EPR) which underlines the current framework of the draft e-waste rules may be an innovative step in the management of e-waste in the country.
- The concept of EPR aims to place full responsibility of collection of end-of-life electronic products and their safe disposal on to the producers.
- They would have to ensure that the polluting products will be recycled in an environmental friendly manner by refurbishes, dismantlers or recyclers.
- It would require the producers and dealers to collect e-waste by providing the consumer a box, bin or a demarcated area to deposit e-waste.
- It has been suggested that major municipal corporations should take the responsibility of collecting e-waste directly from consumers to be handed over to a recycler.

Extended Producers Responsibility (EPR)

- Every dismantler and recycler would also have to be registered with the Government to ensure compliance.
- However, apprehensions have been expressed by some quarters that EPR may be difficult to implement.
- The practicability of such a measure has to be examined carefully in a country like India where it would be difficult to track electronic products which may be sold several times by more than one customer after using those products for some time.
- For instance, it may be impossible for a producer in India to keep track of an electrical or electronic item which he/she might have sold to a customer from the southern part of our country and who in turn might dispose it off to somebody else residing in another distant region.
- Even the Ministry of MSME has commented that it may not be practically feasible for the producers to collect the e-waste generated at the end of life of the electrical and electronic products, because the consumers may be located in different parts of the country, not known to the producers.

Extended Producers Responsibility (EPR)

- In this regard, it has been suggested that almost all major electronic brands have service centres all across the country and these can be used as collection points.
- The incentive, that a customer gets to give an old electronic good for recycling would be key to its success.
- Moreover, many dismantlers are organizing themselves and have often tried to enter into tie-ups with the organized recyclers for carrying out precious metal recovery.
- However, no such tieups have taken place so far because the organized recyclers are awaiting approvals on import licenses for easier access to e-waste.
- Notwithstanding the suggestions mentioned above, the most toxic and polluting segments of the electronics industry, namely, the manufacturing and the disposal have mostly migrated to the developing countries.

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Extended Producers Responsibility (EPR)

- Therefore, it needs to be ensured that the producer responsibility or take-back programme is not used to justify the transboundary movements of wastes.
- As per the Hazardous Wastes Rules, 2008, import of such wastes for disposal is not permitted in the country.
- Import of e-waste by traders is also not permitted. Further, import of e-waste is permitted to actual users in the country with permission of MoEF and licence issued by Directorate General of Foreign Trade (DGFT) for reuse or recycling or reprocessing only.
- The draft e-waste rules are applicable to the e-waste generated from IT and telecommunication equipment and Consumer electrical and electronics i.e. Television sets (including LCD & LED), Refrigerator, Washing Machine, Air-conditioners.
- Based on the experience in implementation of EPR from the above products, the rules would be reviewed for including other categories of e-waste.
- As per the draft e-waste rules, the Municipal Authorities are required to take responsibility of collection of e-waste generated from the orphan products.

Import of e-waste permissions/Import of e-waste under license

- According to the Toxics Link, the import of e-waste should not be allowed as we currently do not have the infrastructure to even deal with the domestically generated e-waste.
- It would only lead to the country becoming a waste dump of the globe with serious health and environment impacts.
- Yet, there are others who call for adequate safeguards to restrict the import of used electrical and electronic equipment in the country and ensure that imported wastes are reprocessed by the companies under license to import e-waste and not re-sold again.

Import of e-waste permissions/Import of e-waste under license

- As per the Exim Policy of Ministry of Commerce's (Handbook of Procedures Vol. 1 2009-14), import of second hand computers including personal computers/laptops and refurbished/reconditioned spares is restricted.
- However, the import of second hand computers including personal computers/laptops and computer peripherals including printers, plotters, scanner, monitor, keyboards and storage units as donations by certain categories of donors was permitted earlier.
- Directorate General Foreign Trade (DGFT) published a Public Notice dated 13.5.2010, wherein this provision has been deleted.
- As per The Hazardous Wastes Rules, 2008, units involved in e-waste recycling are required to obtain authorization and registration from the State Pollution Control Board concerned.
- Directions have been issued to all Central/State Government to handover e-waste generated in their premises to authorized and registered recyclers.

Producer-public-government cooperation

- The Basel Convention has promoted the concept of developing partnerships with industry, the public sector and civil society for reducing hazardous wastes at source and promoting their recycling and re-use.
- Signatories to the Convention can also take advantage of the Convention's expanding series of technical guidelines for the environmentally sound management of specific kinds of wastes.
- For instance, the United Nations Environment Programme's International Environmental Technology Centre (IETC) has produced two manuals on WEEE/e-waste to assist the member countries to develop the inventories and e-waste management system.
- According to Abhishek Pratap Singh from Greenpeace, bringing local bodies and community organizations into the task of collection of e-waste is as important as coordination and incorporating very specific targets.

Producer-public-government cooperation

- Formal recycling is just growing as an emerging industry
- Shri Ram Ramachandran, President, All India e-waste Recyclers Association has pointed out that it would be necessary to take up collection and segregation in a careful manner as, at times, the value of the recovered items after recycling could not cover even the transportation costs.
- Capital investments in setting up of proper e-waste recycling facilities are still insufficient in India due to which most of the recycling projects are in the testing stage.
- Therefore, if the e-waste recycling sector is organized, the Small and Medium Enterprises (SMEs) can come into the picture to earn good revenues and also to assist the Government in achieving its recycling goals.
- The SMEs can develop mechanisms for segregation of recyclable wastes while ensuring that such wastes reach the relevant parties and are not dumped in landfills or illegal dump sites.

Producer-public-government cooperation

- As per the information of the Central Pollution Control Board, there are 23 registered e-waste recycling units in operation having recycling capacity of about 90,000 MT per annum.
- The Ministry of Environment and Forests is implementing a Central Sector Scheme entitled “Creation of Infrastructure for Management of Hazardous Substances”, which has been revised to incorporate provisions for providing financial assistance for setting up of integrated e-waste recycling facilities on a Public Private Partnership model

Administrative Controls & Engineering controls

Administrative controls and engineering controls are two distinct approaches used to manage and mitigate workplace hazards, primarily in the context of occupational health and safety. These controls are part of a broader framework known as the hierarchy of controls, which is used to prioritize and implement measures to reduce risks to workers. Here's an overview of both administrative controls and engineering controls:

1. **Administrative Controls:** Administrative controls involve the use of policies, procedures, and organizational practices to minimize exposure to hazards. These controls rely on human behavior and management decisions to reduce risk. Some examples of administrative controls include:
 - **Workplace Policies and Procedures:** Developing and enforcing rules and guidelines for safe work practices, emergency procedures, and hazard communication.
 - **Training and Education:** Providing thorough training to employees to ensure they understand the hazards associated with their work, know how to use protective equipment, and are aware of proper procedures.

Administrative Controls & Engineering controls

- **Work Scheduling:** Adjusting work schedules to minimize exposure to hazards, such as limiting the time workers spend in high-risk areas.
- **Job Rotation:** Rotating workers through different tasks to reduce prolonged exposure to specific hazards.
- **Warning Signs and Labels:** Placing signs, labels, and posters to indicate potential hazards and remind workers to take necessary precautions.

While administrative controls can be effective in promoting safe practices, they are often reliant on human compliance and may not provide physical barriers against hazards.

Administrative Controls & Engineering controls

1. **Engineering Controls:** Engineering controls involve the design and modification of the work environment to eliminate or reduce exposure to hazards. These controls are considered more effective because they physically alter the workplace to mitigate risks. Examples of engineering controls include:
 - **Ventilation Systems:** Installing ventilation systems to remove hazardous fumes, dust, or gases from the air, thereby maintaining safe air quality.
 - **Guarding and Enclosures:** Installing physical barriers, guards, or enclosures around machinery or equipment to prevent workers from coming into contact with moving parts.
 - **Isolation and Segregation:** Designing work areas to isolate hazards from workers. For example, using soundproof rooms to protect workers from excessive noise.
 - **Ergonomic Design:** Creating workstations and equipment that reduce the risk of musculoskeletal injuries by promoting proper posture and body mechanics.
 - **Substitution of Hazardous Substances:** Replacing hazardous materials with less hazardous alternatives to reduce exposure risks.

Administrative Controls & Engineering controls

- Engineering controls are generally preferred over administrative controls because they directly address hazards and provide more reliable protection for workers.
- In practice, a combination of administrative and engineering controls, along with personal protective equipment (PPE), is often used to provide a comprehensive approach to workplace safety. The goal is to create a work environment that minimizes risks and ensures the well-being of employees.

Monitoring of Compliance of Rules

- The State Pollution Control Boards or Committees responsible for grant of authorization, monitoring compliance of authorization and registration conditions can take action against violations of rules.
- On the other hand, the Central Pollution Control Board (CPCB) can monitor the compliance of conditions stipulated for granting registration.
- In this regard, as per the draft e-waste Rules, producers, dismantlers, recyclers & collection centres, are required to seek authorization and registration from the State Pollution Control Board (SPCB) concerned and file annual returns.
- SPCBs are required to submit annual reports to CPCB. CPCB will consolidate the information received from all SPCBs and submit an annual report on e-waste management, along with its recommendations, to the Ministry.

Effective regulatory mechanism strengthened by manpower and technical expertise

- According to the Report of the Prof. M.G.K. Menon Committee set up by the Supreme Court on Hazardous Wastes, 77 per cent of Chairpersons and 55 per cent of Member Secretaries in different State Pollution Control Boards were not qualified enough to hold the posts.
- In its 192nd Report, the Department-related Parliamentary Standing Committee (DRPSC) on Science and Technology, Environment and Forests underlined the need for qualified Members in the Boards of the Central Pollution Control Board and the State Pollution Control Boards.
- The Committee was informed that the key posts in these Boards were being manned by officers of the Indian Administrative Service or bureaucrats who neither possessed the necessary capabilities and expertise in properly managing and planning pollution control activities nor had enough time to pay attention to these activities for obvious reasons.

Effective regulatory mechanism strengthened by manpower and technical expertise

- The trend had led to virtual relegation and replacement of technically capable persons by people with inadequate knowledge.
- The Committee observed that it was a very disturbing trend and called for its redressal.
- E-waste management along with other wastes management, as recommended by the DRPSC, rightly require stronger regulatory mechanism and further strengthening of the Central and State Boards both in terms of manpower and expertise.
- The MoEF has initiated the strengthening of capacity building for CPCB and SPCBs both in terms of man power and infrastructure.

Reduction of waste at source

- With nearly 94 per cent of the materials extracted for manufacturing durable products becoming waste before the product is manufactured, reducing waste at source can clearly promote economic and industrial competitiveness.
- Many other social and economic benefits of sound waste management include job creation, skills development and reduced clean-up and public health costs.
- There is a need for setting out incentives and tools for minimizing the generation of wastes, treating wastes as nearly as possible in the place where they were generated, and minimizing international movements of hazardous wastes.
- Reducing wastes at source would reduce the financial incentives that drive the illegal trade that inspired the adoption of the Basel Convention

Reduction of waste at source

- Moreover, even if there are so-called state-of-the-art hazardous waste recycling facilities in the country, these make adverse impact on environment and health of workers due to release of toxins and harmful emissions.
- It is risky and polluting business even in optimal conditions.
- The ultimate answer is to minimize the generation of hazardous waste, not recycle them.²⁰⁶ In this regard, the MoEF is promoting the 3 R Concept (Reduce, Reuse and Recycle) for Hazardous Waste Management.