



Status of E-Waste in Delhi-NCR and Role of International Certifications in E-Waste Management

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ABSTRACT

India generated 1.7 million tonnes of Waste Electronic and Electrical Equipment in 2014, making it the fifth largest electronic waste producer in the world (Global E-Waste Monitor 2014). With less than 10 per cent of the electronic scrap being recycled in an environmentally friendly and responsible way. Delhi-NCR is emerging as the world's dumping yard for e-waste and likely to generate to an extent of 95,000 metric tonnes (MT) per annum by 2017 from the current level 55,000 metric tonnes per annum growing at a compound annual growth rate (CAGR) of about 25% (ASSOCHAM paper August 2014). Delhi-NCR is also the main hub of e-waste recycling in India, and perhaps the world. The e-waste imported from Kolkata, Mumbai and Bangalore makes its way to Delhi as there is a ready market for glass and plastic in the NCR. Also, the wastes from Mumbai constitute a bulk of the 1,500 tonnes discarded electronics that land in Delhi's scrap yards every day. This paper highlights the hotspots of e-waste in Delhi-NCR and the role which international certifications like R2, E-Stewards, and EPEAT etc play in management of e-waste.

KEYWORDS : E-waste, Delhi-NCR, Formal and Informal sector, R2, EPEAT

1. INTRODUCTION

E-waste is a term used to cover all items of electrical and electronic equipment (EEE) and its parts that have been discarded by its owner as waste without the intent of re-use (Step Initiative 2014). It is also referred to as WEEE (Waste Electrical and Electronic Equipment), electronic waste or e-scrap in different regions. E-waste includes a wide range of products, almost any household or business item with circuitry or electrical components with power or battery supply. In India, the electronic waste management assumes greater significance not only due to the generation of the country's own waste but also dumping of E-waste particularly computer waste from the developed countries. The e-waste quantification based on computers, mobile phones and television in 2007 found that 3,82,979 tonnes e-waste generated in India and 50,000 tonnes was imported illegally [Khattar, 2007] from USA and EU countries in the ratio of 80 to 20 to the total quantity imported respectively [Pratap, A, 2009].

2. E-WASTE GENERATION IN DELHI-NCR

Delhi is second largest e-waste generating city in India generating about 55,000 metric tonnes of e-waste annually (ASSOCHAM 2014). It is expected that Delhi will be generating a whopping 95,000 metric tonnes of e-waste by 2017. Table 1.0 shows the top e-waste generating cities in India (2014)

Table 2.0 Top E-waste Generating cities in India

S.No.	Cities	E-waste generated in MTA (metric tonnes annually)
1	Mumbai	96,000
2	Delhi	55,000
3	Bangalore	52,000
4	Chennai	47,000
5	Kolkata	35,000
6	Ahmedabad	26,000
7	Hyderabad	25,000
8	Pune	19,000

3. E-WASTE RECYCLING IN DELHI-NCR

In India, recycling of e-waste is being handled by formal and informal recyclers. It has been estimated during study (GIZ-MAIT, 2007) that 19,000 MT/ year is the total e-waste recycled in India. Of the total e-waste recycled in India 95% is recycled by informal recyclers while only 5% by formal recyclers.

Delhi is a center of informal recycling of e-waste. The workers in the informal sector are uneducated and unemployed youth, women and kids most of them have relocated from the neighboring regions of Bihar and Uttar Pradesh. The hotspots of e-waste dismantling & recycling in Delhi are Seelampur, Mustafabad, Gokulpuri Shastri Park,

Turkman Gate, Mayapuri, Mandoli and Krishna Vihar. The e-waste imported into Mumbai and Chennai basically advances toward Delhi as there is a prepared business sector for glass and plastic in the NCR. Table 3.0 shows some of the sites/hotspots of e-waste and their main operations (Toxics Link-On the Edge 2014 report)

Table 3.0 Hotspots and their operations in Delhi-NCR

S. No.	Site	Operations
1	Mustafabad	e-waste dismantling, CFL repairing, CRT refurbishing
2	Old Seelampur	e-waste dismantling
3	Shastri Park	e-waste dismantling
4	Yamuna Vihar	CRT rerunning and refurbishing
5	Moti Nagar	Trading and assembling CFLs
6	Nehru Place	Trading of second hand electronics and dismantling

The availability of cheap labor along with the negligent implementation of regulations has made Delhi a preferred destination for informal recycling of e-waste in India.

4. INTERNATIONAL CERTIFICATIONS AND E-WASTE MANAGEMENT

International certifications like R2, EPEAT and E-Stewards could play an important role in e-waste management.

4.1 R2 (Responsible Recycling): SERI (Sustainable Electronics Recycling International) is the housing-body for the R2 standard. According to it R2 is the leading standard for electronics repair and recycling

The R2 Standard provides a common set of, safety measures, processes and documentation requirements for e-waste recycling. R2 is rigorously and audited independently by a third certified party, emphasizing quality, transparency and safety. According to SERI over 530 facilities are currently R2 certified in 21 countries, with more added every day.

In India very few E-Waste Recyclers are certified with R2.

R2 certification promotes effective and safe recycling of e-waste. It also checks the downstream chain of recycling and can help in minimizing risks to the public and environment.

For e-waste recyclers R2 promotes reduced insurance costs and minimizes liability. R2 is reviewed by a certified third party thereby it can instill public confidence and people will prefer the recyclers with R2 certification.

4.2 E-Stewards: The e-Stewards is an electronic waste recycling standard created by the (BAN) Basel Action Network. In 2009, BAN published the e-Stewards Standard for Responsible Recycling and Reuse of Electronic Equipment which set forth requirements for becoming a Certified e-Stewards Recycler—a program that “recognizes electronics recyclers that adhere to the most stringent environmental-ly and socially responsible practices when recovering hazardous electronic materials.

E-Stewards certification has the endorsement of major environmental groups, the Sierra Club, including Greenpeace and the Natural Resource Defense Council. E-Stewards certified recyclers function under a management system to achieve legal compliance with all laws, including the Basel Convention.

The organization for E-Stewards certification according to the website (e-stewards.org) accessed on 22nd July 2015 forbids practices such as the use of sweatshops, prison and child labor anywhere in the supply chain. E-Stewards certification has a worldwide acceptance and incorporates global standards like ISO 14001.

4.3 EPEAT (Electronic Product Environmental Assessment Tool)

EPEAT is the definitive global rating system for greener electronics. It is an easy-to-use resource for purchasers, resellers, manufacturers and others to identify environmentally preferable devices. According to the Green Electronics Council, “the system addresses the elimination of toxic substances, the use of recyclable and recycled materials, product design for recycling, product longevity, energy efficiency, corporate performance and packaging attributes, as well as requiring manufacturer responsibility for collection and responsible recycling of all registered devices”.

EPEAT registered products are environmental friendly and meet strict environmental criteria that takes into account product lifecycle, from

toxic materials and energy conservation to product longevity and end-of-life management. EPEAT-registered products offer a reduced environmental impact across their lifecycles.

As per information published on the official website of EPEAT accessed on 22nd July 2015 India has become 43rd country in which EPEAT registration and verification services are available and help purchasers select products that have low environmental impacts.

5. CONCLUSION

Based on the literature survey it can be concluded that the e-waste generation is increasing at a much higher pace than its recycling in Delhi-NCR. A major part of the e-waste is recycled by the informal sector. The e-waste recycled and recovered by informal sector is much higher than the contribution from the formal sector. The informal sector has more manpower with unskilled employees and is not governed by any health and environmental regulations. The E-waste recycling and recovery options practiced in India by the informal sector are very outdated and hazardous, causing severe environmental and occupational hazards. There should be awareness and initiatives made to merge the informal sector with the formal sector such that collection, segregation activities are done by informal sector while as dismantling and recycling activities are taken by formal sector who use better facilities and personal protective equipments while doing such operations.

If the producers get registered themselves with EPEAT their products would be greener and contain very little hazardous substances. Consumers should also prefer buying the electronic goods which are EPEAT certified.

Authorized recyclers (registered with CPCB/SPCB) should also take step to get themselves certified by R2 so that their recycling activities don't pose a threat to the workers or environment.

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