



Toxics Link
for a toxics-free world

**Workshop
On
“E Waste Management”**

15th December 2011

**Lynx 1& 2, Epicentre at Apparel House,
Gurgaon**



I. Workshop Background:

Gurgaon, in last decade has emerged as a major business center, being part of the National Capital Region. Many corporate, business houses, including BPOs, Banks, IT companies have their office in Gurgaon, which is now one of the India's prime information technology and IT-enabled service hubs. The growth in the city has fuelled greater consumption and waste generation of Electrical and Electronic Equipment, without adequate infrastructure to deal with this toxic waste.

Toxics Link, an environmental NGO, is dedicated in bringing toxics related information in the public domain, both relating to perspectives from the ground as well as exchanging global information. Electronic waste (E-waste) has been another important issue that Toxics Link has been engaging in for last few years and the organization has been actively involved in the formulation of Rules.

In the wake of the E-Waste Rules coming into force in May, 2012, Toxics Link saw the need to facilitate discussions and information exchange among the key stakeholders and organized one day workshop on 15th of December in Gurgaon. The workshop aimed to discuss the issues and challenges related to E-waste management and also look at the preparedness of different stakeholders in the city and the state to deal with the upcoming Rules.

II. Inaugural Session

Mr.Satish Sinha (Associate Director, Toxics Link),on behalf of the organization welcomed all the participants and the audience to discuss the major issues surrounding E waste management ; the new regulation promulgated by India that will come into force from May 2012 ; its implementation aspects; preparedness the country has and the preparedness required. At the outset, while briefing on Toxics Link's engagement with the issue, he said that the organization has essentially traced the whole route of national waste unraveling pertinent issues.

Elaborating the challenges the country faces, he said that the growth rate in the electronic industry is phenomenal and the penetration is high, touching even the hinter lands like the rural sector. This has lead to phenomenal rate of waste generation, whereas the kind of infrastructure the country has for managing the waste continues to be the same- a network of informal sector with its own challenges and hazards. The challenge also lies in the collection mechanism of the country as it is largely done by the informal sectors and expressed the need to make the informal sector, a part of the value chain and garner the huge capacity and skills of the sector.



He further pointed out that the issue seems more complex, as a sizable quantity of E waste generated in the country comes from outside as illegal waste.

Elaborating the E waste rule, he said that the concept of producer's responsibility incorporated in the rule is a progressive concept however; the challenge lies in operationalising it.

The inaugural address was followed by a film screening on E waste titled 'Citizens at Risk' by Chintan, (Ngo based in New Delhi) and the Silicon Valley Toxics Coalition. The film looked at the different aspects of informal sector in India and depicting how the poor, both children and adults are forced to recycle highly toxic materials under perilous condition. It also laid bare the global exploitation of the poor by a consumerist society.

III. Technical Session I

There were four speakers in the session namely, Mrs. Priti Mahesh (Senior Programme Officer, Toxics Link), Mr. B. Vinod Babu (Scientist 'D' & Incharge, Haz Waste Division CPCB), Mr. Satish Sinha (Associate Director, Toxics Link) and Mr. Arjun Balakrishnan (Director Operation & Planning, Panasonic India).

The first technical session began with a presentation on 'E Waste Global and Indian Scenario' by **Ms. Priti Mahesh** (Senior Programme Officer, Toxics Link), where she highlighted the problems associated with E Waste. She briefed on the global scenario of electric market and said that the industry is growing by 12.6% annually and is expected to reach \$ 3.2 trillion by 2012.

The enormous number of Electronic goods and equipments that go into the market and the replacement market generates huge amount of E Waste. Talking on the issues of generation and the flow of waste she added that, developed countries like Europe, have systems of tracing the source as well as disposal of waste; however, most Asian countries lack such systems.

Skeptical about the current scenario, she said that even in large cities like Delhi and Gurgaon the collection mechanisms and facilities are absent; reflecting the bleak scenario in smaller towns or cities. Thus, there is a need to cover these segments, where presently the penetration is abysmally low but are the future targets. Also, there is a need for some concrete framework that is not a copy of other countries but some local solutions and innovations.

She gave a brief insight into the Composition of EEE and the toxicity associated to these. Shedding light on the current practices she said that there is no framework for controlling the usage of toxic material in EEE. E-waste processing in India is mostly managed by a very well networked informal sector; where the entire recycling chain, especially related to material recovery, are inappropriate and highly dangerous and are likely to impact both the environment and human health adversely. Also, the non recyclable materials are dumped, as the country does not have any landfills. The informal sectors engaged in recycling do not any have a tie up with the scientific disposal site thus, the materials are either dumped or drained. The other concern lies in International trade of secondhand products or dismantled parts/materials to the developing countries like India; China Pakistan; because of cheap labor and sloppy environmental norms.

Further, she gave a brief background of the legislations across, and explained that globally there are WEEE directives. In the European Union and China the WEEE directives covers ten categories of E Waste while in India only two categories are covered. Also, there are various labeling programs globally, designed to identify and promote energy-efficient products. However, in India besides energy rating there is no other labeling.

She also touched on the changing landscape in India and said that currently the country has E-waste Rules that will come into force from May 2012. Besides there are some positive initiatives like the take back program by companies like Nokia, HCL, DELL and Panasonic. Also, there has been significant development in the Recycling infrastructure with 23 authorized recyclers at the central level and many more at the state level. Elaborating on the future roadmap for the country she said that there was a need to create an Extended Producer Responsibility, Individual producer Responsibility and recycling Infrastructure.



Mr. B. Vinod Babu (Scientist 'D' & Incharge, Haz Waste Division CPCB), presented on the 'E-Waste (Management & Handling) Rules, 2011 & Environmentally Sound Management of E-Waste.' He elaborated on the salient features of the E Waste Rule that is going to be effective from 1st May, 2012. Shedding light on the ambit of the Responsibility of Producer, he explained that it covered Collection of E-waste in line with the principle of 'Extended Producer Responsibility' (EPR), and channelization of such waste to registered dismantler or recyclers. It also ensures setting up collection centers or take back systems either individually or collectively; creating awareness; obtaining authorization from the concerned State Pollution Control Board or Pollution Control Committee; maintaining records and filing annual returns.

He also elaborated on the responsibility of the collection Centers, the Bulk Consumers and the Dismantler & Recycler. Further, he gave a brief insight on the reduction in the use of hazardous substances (RoHS), where two categories of equipments namely, Information Technology & Telecommunication Equipment and Consumer Electricals and Electronics are covered.

He also explained the steps and operations involved in environmentally sound management of E-waste disposal and briefed on the household collection system in the U.K, facilities available with different recyclers and the processes involved. Giving example of Illegal imports of E Waste he said that the developed countries send it to the developing countries like India and wash their hands off.

This was followed by a presentation on 'Unraveling EPR and RoHS', by **Mr. Satish Sinha** (Associate Director, Toxics Link), where he explained in great detail the concepts of EPR and RoHS and its application in E waste Management. He elaborated on the essential elements of an effective EPR program and said that that the producers of the products are responsible for the life-cycle environmental impacts of the whole product system. This means that firms, which manufacture, import and/or sell products and packaging, are required to be financially or physically responsible for such products after their useful life and are responsible for the final

disposal of the product. He also elaborated on the tools and the essential elements required for driving an effective EPR program.

He said that EPR imposes accountability and the manufacturers need to innovate systems. He also briefed on RoHS that restricts the use of six hazardous materials in the manufacture of various types of electronic and electrical equipment. He further explained the need to implement RoHS and suggested the toxic materials like Lead, Mercury, Cadmium, and Hexavalent chromium, Polybrominated biphenyls (PBB), Polybrominated diphenyl ether (PBDE) used in electronics can be substituted by alternate or less toxic substance.

Mr. Arjun Balakrishnan (Director Operations & Planning, Panasonic), presented on 'India E Waste Recycling: A Producer Perspective' where he gave an overview of the Home Appliance Recycling Law in Japan and briefed on Panasonic's Initiatives for recycling. He also talked about the manufacturer's responsibility in home appliance recycling system. He further listed down the Panasonic's home appliance recycling fee and traced the transition of recycled units & recycling rates (All MFRs) over the past ten years.

In his closing thoughts he threw light on the laws in Japan, the US and India and explained that for the past ten years the law is in force in Japan however ,further improvement and evolution of the system was required. The US on the other hand, is on its way of seeking an ideal national solution, while in India; the law on E Waste will be in force from May 2012.



This was followed by the question answers session where some key issues and ideas were flagged. Upasana Choudhry, from HP shared the initiatives undertaken by HP and their life cycle approach. She further said that there is a responsibility on the consumers at the same time and the government needs to facilitate it. She talked on the challenges posed when the authorization remains due, as the companies have to deal with multiple Pollution control board that lacks uniformity in operation.

There were important questions on E waste rule not being applicable on SeZ. Also, there were questions on the collection targets in other countries and on provisions to reduce E waste or increase the lifecycle of the electrical goods.

IV. Technical Session II

Post lunch ,the second technical session resumed which began with a presentation on ‘Dell’s Take Back Program’ by **Mr. Deepak Ohlyan** (Dell India) ; where he briefed on the milestone covered by the company . He said that the company has recycled 220 million kg of equipment since 2006 and has been the first to ban the export of E-waste to developing countries. Further, he shared Dell Policies in electronics disposition and gave a brief overview of corporate policies & standards. He also elaborated on Dell’s global take back program and Dell’s Global Consumer Recycling Program in Asia Pacific.



This was followed by a presentation by **Rachna Arora** (Technical Expert, and GIZ-ASEM) ,on ‘Integrating the Informal Sector-its Possibilities and Challenges’ ; here she elaborated on the challenges of the informal sector in terms of environmental pollution and the health afflictions. She also briefed on the social implications associated with the unorganized sector, like threat and harassment, child labour, unstable employment and unsafe working conditions. However, this sector has had a historical role in waste management and is highly networked and skilled. She said that there is a need to integrate the informal sector in the formal, as the network of the formalized informal sector will foster market cooperation.

Mr. Sanjay Saxena (CEO, Greenscape Eco Management), briefed on ‘Usage, Recovery of Metals and Electronic Industry Initiatives on e-recycling’ and gave an overview of Greenscape Eco Management. He also elaborated on the metal composition in electronics, the various metals found in electronics, global initiative by electronic industry and the Indian Scenario. Taking about the Indian scenario, he explained that in India recycling is value driven and not

environment or CSR driven and more of re-furbishing is carried out. Besides, the country does not define the minimum requirements and there are no health & safety standards, no pollution control norms. He also expressed concern on the small players involved in recycling who mostly extract the precious metals and discard the hazardous into the environment.

Talking about the initiative by the electronic industry he said that ‘Electronic Industry Citizenship Collation Code’ has come up that presently has 50 members globally; HP, Dell, Samsung are a part of it. The whole fundamental of this collation is to come up with a procedure which allows them to audit the suppliers and the recyclers ensuring that full compliance exists with all the standards.

According to him May 1st 2012 Implementation of the e-waste Rules is the first major step in the right direction and urged for the need to pledge to work for long term “Environment Protection” and not Short Term “Value Creation.



V. Panel Discussion

There was a Panel Discussion on ‘Challenges of effective implementation of E Waste Rules’ chaired by Mr. Satish Sinha who conducted the session; while the panelist included Mr.Arjun Balakrishnan (Director Operations & Planning, Panasonic India), Mr.Sanjay Saxena (CEO, Greenscape Eco Management) and Dr. Lakshmi Raghupati (Consultant).

Mr. Arjun (Director Operations & Planning, Panasonic India), explained the need for industry development from a holistic point of view and integration of the Informal sector. He said that bringing the Informal sector in the formal loop of the recycling system was essential. He also suggested the need to give some attractive incentives and the incentives should incorporate the element of CSR. He also stressed on the need to build awareness.

While **Dr. Lakshmi** (Consultant) talked about the E Waste rule and its enforcement. Touching on the guidelines she said that there was a need to revisit and reformulate the guidelines as there were many grey areas, where things need to be developed. Further, some of the stakeholders like

the informal sectors and the refurbishment systems that are not included in the rules should be provided guidance through the guidelines. The Guidelines should be made comprehensive and should seek to go beyond the rules; addressing all the stakeholders' requirement. She also recommended for the preparation needed on ground by the various stakeholders to make the rule effective. She also stressed on the need to involve the informal sector; bring them into the mainstream and formalize them even in the regulatory framework.

Highlighting the flaws in the system she pointed out that the producers need to make preparation and system for appropriate channelization of waste. However, even the major cities like Bangalore, Ahemdabad and Mumbai lack awareness and concrete initiatives. Further, she said that the collection system is in vacuum and should be supported by the government, the agencies and the stakeholders. Being a post consumer waste it needs a proper collection system. Also, there was a need to scale up of different categories of products, be it of negative value or positive value.

Mr. Sanjay Saxena (CEO, Greenscape Eco Management) , said that there were many things in the guidelines which are not very conducive to the recyclers thus,the recyclers should be invited to these forums to give a practical example of the problems. He stressed on the need to frame out a minimum requirement, to register a recycler. Echoing the concerns of Dr. Lakshmi, he elaborated that although there were attempts to make the forums participatory, held for the evolution of the rule, there were many loopholes on certain essential parts which needs to be plugged in order to roll out implementation.



While **Mr. Satish Sinha** (Associate Director, Toxics Link), shared that although a fair amount of consultation was done in drafting the Rules and the Ministry kept it open for a certain period of time, seeking inputs; there was a need to evolve it further and take it forward. He seemed apprehensive about the guidelines setting things in place unless the stakeholders come together for consultation hinged by the government.

Talking about the informal sector he said that the sector has a huge potential in terms of skills and expertise however, there is a need to develop different models of integration that would make the informal sector a part of the value chain.

On the issue of incentivizing organization or the manufacturers Mr. Sinha optimistically suggested that mechanisms should be devised to incentivize them. He urged that the issues of setting up targets and incentives should be combined. He further suggested that there was a need to come up with mechanisms like the collection mechanism, multi-compliance mechanism or single compliance mechanism. Citing some of the innovative mechanisms adopted by the Bureau of Energy Efficiency and NRHM that have inbuilt cost of recycling in the product cost he suggested for transparently internalizing the cost of recycling.

The workshop saw an overwhelming response and the audience participated actively in the discussion adding some pertinent ideas and proposals to the panel discussion. There were lot of queries on future of the existing system where the recyclers are primarily engaged in cherry picking, thus not taking in the non profitable parts but only the I.T; the type of system needed where the salvage value is negative for some products. Some significant question was raised on the emerging terms of the various recyclers and what will evolve over time. Also there was a concern that the absence of any fixed targets might discourage the companies or the brands already engaged in recycling. Further there were question on reason for keeping the SEMs out of the rule and the difference between consumers and the bulk consumers.

Wrapping up the session Mr. Sinha thanked everyone and urged for the need to implement things on ground rather than on paper in order to move forward.

There were 60 participants. The participants of the workshop included the representatives of the Central Pollution Control Board, Corporate business houses, I.T companies, EEE and recycling industry, Educational and Research Institutes, Media houses and Civil Societies.

VI. Key Recommendations:

There were numerous recommendations on E Waste management; they are summarized in the list of key recommendations below:

- There was an agreement among the participants to devise some market mechanism like incentivize the organizations and the manufacturers.

- Awareness and Education: it was agreed that there is a need to generate awareness among all the key stakeholders including the informal sector and the consumers.
- Generally there was an agreement among the participants on setting up fixed targets.
- It was agreed that there was a need to integrate the informal sector and make them a part of the value chain; creating a network of the formalized informal sector that would enable cooperation and a “win-win” situation for both the formal & the informal sector.
- Also, there was an agreement on the need to frame out a minimum requirement, to register a recycler and the need for uniformity in the operation of the various pollution control boards.

A Multi-stakeholder workshop on E-waste management
15^h December 2011, Gurgaon

AGENDA

1000-1030	Registration	
1030-1115	Inaugural Session	
1115-1130	Tea Break	
	Session I	
1130-1150	E-waste : Global and national issue	Priti Mahesh, Project Manager, Toxics Link
1150-1210	E-waste Rules and guidelines	B. Vinod Babu , Scientist 'D' & Incharge, Hazardous Waste Division, CPCB
1210-1230	Initiatives by the state	Pradeep Yadav, Environmental Engineer, Haryana Pollution Control Board
1230-1250	Unraveling EPR & RoHS	Satish Sinha, Associate Director, Toxics Link
1250-1315	Question Answer Session	
1315-1400	Lunch	
	Session II	
1400-1420	India E-waste Recycling: A Producer Perspective	Arjun Balakrishnan, Director Operations & Planning, Panasonic India
1420-1440	Integrating the Informal Sector- Possibilities and Challenges	Rachna Arora, Technical Expert, GIZ-ASEM
1440-1500	International and national Take back programmes	Deepak Ohyan, Senior Executive, Dell India
1500-1520	E-waste Recycling	Sanjay Saxena, CEO, Greenscape Eco Management
1520-1540	Question Answer Session	
1540-1640	Panel Discussion Chaired by Satish Sinha	
1640-1700	Summing up and Way Forward	

List of Participants

S.No.	Name	Organization
1.	Akash Mittal	Avni Green Power
2.	Amar Singh Yadav	Green Vortex
3.	Ankit Chaturvedi	Earth Sense Recycle Pvt. Ltd.
4.	Ankush Garg	Elcorte Ingles
5.	Anubha Taneja	Genesis Burson- Marsteller
6.	Arjun Balakrishnan	Panasonic India Pvt. Ltd. (PI)
7.	Arshad	Greenvolution Eco Services Pvt. Ltd.
8.	Ashwini K. Aggarwal	Applied Materials
9.	Avishek G.Dastidar	The Indian Express
10.	B. Vinod Babu	CPCB
11.	Barkha Mittal	Greenvolution Eco Services Pvt. Ltd.
12.	Deepak Ohlyan	Dell India
13.	G. Mukesh Gupta	Green World International
14.	Gaurav Aggarwal	G E
15.	Gautam Chopra	IFC
16.	Jeevesh Kumar	Greenscape Eco Management
17.	Kalpana Sharma	Asti Electronics India Pvt. Ltd.
18.	Karishma Vohra	TERI University
19.	Lakshmi Raghupati	Consultant
20.	Mahua Ghosh	The Shri Ram School-Aravali

21.	Manisha Bhaumik	The Shri Ram School-Vasant Vihar
22.	Manjri Gopalan	Nokia
23.	Manoj Kumar	SEWA
24.	Manoj Kumar	Asti Electronics India Pvt. Ltd.
25.	Mohd. Salim	Greenscape Eco Management
26.	P. E. Subash	SIMS Recycling Solutions
27.	Prachi Das	TERI University.
28.	Prateek Yadav	Green World International
29.	Rachna Arora	GIZ-ASEM
30.	Rajat Vishnoi	Green World International
31.	Rakeshwar Bhardwaj	Greenscape Eco Management
32.	Sandhya Mohan	The Shri Ram School-Aravali
33.	Sanjay Saxena	Greenscape Eco-Management
34.	Sanjay Varma	Wipro Limited
35.	Satendra K Jain	NTPC Ltd
36.	Seema Yadav	Asti Electronics India Pvt. Ltd.
37.	Shalender Kumar	Dell
38.	Shankar Sharma	Green Vortex
39.	Shashi Bhushan Pandit	HRA
40.	Shubhra Kumar	Greenscape Eco Management
41.	Summi Jaidka	Omniglobe International
42.	Tapas Kumar Mandal	Panasonic India (P) Ltd
43.	Ujwal Gupta	Green World International
44.	Upasana Choudhry,	Hewlett Packard
45.	Vaibhav Agarwal	Green World International

46.	Vishal Verma	Samsung
47.	Yashlok Singh	Amar Ujala
48.	Satish Sinha	Toxics Link
49.	Priti Mahesh	Toxics Link
50.	Vinod Kumar Sharma	Toxics Link
51.	Shriram	Toxics Link
52.	Rambha Tripathy	Toxics Link
53.	Prashanti Tiwari	Toxics Link
54.	Rajeev Betne	Toxics Link
55.	Prashant Rajankar	Toxics Link
56.	Kankana	Toxics Link
57.	Rahul	Toxics Link