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Workshop Report E-waste – Creating Change



Foreword

Management of electronic waste has been an issue of serious environmental concern in India since over a decade and it was a result of much sustained campaign that the government finally notified regulation in 2011 called 'E waste management and handling rules 2011'. The rules have incorporated the principle of Extended Producers Responsibility and made the manufacturers responsible for dealing with post consumer waste of their respective product range. The Rules also place huge responsibility on State Pollution Control Boards/Committees, with the onus to implement the rules in their respective states.

The Rules, which was set to change how E-waste was managed in the country, has been in force for more than a year. But even after one year, since the rules have come into effect, there is little change on ground. There have been very few initiatives by stakeholders to implement these rules and set up a clean e-waste channel.

Though in most states e-waste management is at nascent stage, North East India seems to be one of those regions where there has been very little action on the issue of e-waste. The problem in the region is compounded because of huge inflow of imported, sometimes, substandard, electronics. With little awareness and large usage of electronics, this toxic waste issue has the potential to damage the fragile environment of this region. Since geographically the states in the region have many similarities and hence similar issues and infrastructural needs, it was felt appropriate to discuss the needs of the region as a whole and find common solutions on collection and recycling infrastructure.

It is in this context that Toxics Link organized a one and a half day workshop titled 'E-waste: Creating Changes' on 5- 6th September 2013 in outskirts of Guwahati, Assam. This workshop was meant to understand the current situation and initiatives by the State Pollution Control Boards in this region. It was also an attempt to bring together some important stakeholders towards evolving an informed and consensual approach in E-waste management in the North East India and to trigger dialogue on developing a common roadmap for future action.

Toxics Link, an environmental NGO, is dedicated to bringing toxics related information into the public domain, both relating to perspectives from the ground as well as exchanging global information. The organization has been working on the issue of E-waste for more than a decade and has been involved in pushing for safer management of E-waste in the country.

The workshop was attended by together the Eight State Pollutions Control boards (Assam, Arunachal Pradesh, Manipur, Mizoram, Meghalaya, Nagaland, Tripura and Sikkim and some local civil society organizations for charting out the future roadmap. The workshop speakers included experts from Toxics Link, Central Pollution Control Board, Recycling company who shared their experiences on E-waste management.

This report reflects the issues discussed at the workshop, including the current scenario, E-waste Rules 2011, its implementation status, stakeholder perspectives and its inadequacies or shortfalls. The report also records suggestions made by the participants and speakers at the workshop.

We hope that the report captures the concerns and expectations and also the roadmap decided by the stakeholders present.

Chapter I

E-waste – Creating Changes

– Day 1

S this was probably the first workshop being organized on e-waste in this region, the foremost step included making the stakeholders understand the issues related to e-waste and also understand the governing Rules. The attempt was also to understand the current scenario in all the participating states. The three technical sessions in the day focused on these aspects.

Inaugural Session

Satish Sinha, Associate Director, Toxics Link welcomed all the participants and briefed them about Toxics Link and its work areas. He mentioned about the organization's work on the issue of e-waste since 2003 and how many years of effort finally resulted in formulation of e-waste rules. He cited the bottlenecks in implementation of e-waste rules and the need to make efforts to tackle these.

He pointed out to the participants how north eastern region has unique characteristics and the intrinsic nature of the region makes it more feasible for e-waste to be dealt with as a common issue. He added that the purpose of the workshop was to come up with a future roadmap for the sound management of e-waste in the region. As E-waste is a complex waste stream and it is being generated by each and everyone, it is very important to find solutions for managing such complicated waste in best possible way.

He talked about the regulatory framework and the



responsibility assigned to various stakeholders, with the State Boards playing a very crucial role. He said that with the increasing problem of e-waste, it is important for the State Boards to come up with some ideas to resolve the issue. Toxics Link with 10 years of experience in e-waste would like to facilitate the discussion and help come up with an established system in the north east. The workshop brought together the pollution control boards, recyclers and civil society organizations on the same table to discuss the matter in details.

Expectations from the Workshop

Before commencing the technical session, participants were asked to share their expectations from the workshop. Some of the key expectations listed by the participants were:

- Clarity on the definition of e-waste
- Understanding and graveness of the issue

- E-waste assessment Regional market and methods of assessment
- E-waste Rules explanation
- Collection solution
- Solutions besides recycling
- Best practices for e-waste management
- Disposal facility
- Logistical challenges
- Financial viability
- Recycling process
- Capacity building
- Mass awareness
- EPR Role of producers
- Role of Civil Society Organizations
- Role of informal sector
- ULB's involvement
- Advocacy tools
- Joint Forum

Technical Session I

The first technical session had three presentations. The speakers helped the participants get a clear picture on e-waste scenario, regulations and the need for assessment of e-waste.

Ms. Ankita Jena, Programme Officer, Toxics Link

E-Waste: Global and Indian Scenario

Ms Jena briefed the participants about the concerns around E-waste, explaining the graveness of the



e-waste issue with respect to both global and Indian scenario. In her presentation, Ankita touched upon the problems related to e-waste toxic contents, informal recycling practices in various parts of the country and the concerns of dumping from developed countries. She also deliberated upon the importance of recycling or need for proper management e-waste. It is not only the toxic elements but the valuable resources within the waste that makes it so unique as well as tricky to handle at the same time. If e-waste is handled properly then it would not only

help replenish the resources but would also create job opportunities for many.

In a huge country like India, there are plethora of rules and regulations but implementation is very poor. With e-waste rules in place, very few changes have seen on ground till date. She also stressed upon bringing focus on product life cycle approach to have gadgets which are more on design for environment rather than design for dump.

At the end, she elaborated on the 3 R principles which if implemented can make wonders. She concluded by saying that it is the responsibility of individuals to play their part in the entire value chain and make a difference in the entire system.

Mr. S. K. Dutta, Central Pollution Control Board, Regional Office, Shillong, Meghalaya

Rules and Guidelines of E-waste

Mr. Dutta, in his presentation, explained the E-waste rules in a detail, elaborating on e-waste definition and the various chapters of the 2011 rules. He said that e-waste should be handled in a way that it has minimum impact on environment and human health. He specifically talked about Extended Producer Responsibility (EPR) and responsibilities of all stakeholders.

He agreed with the concerns that there are problems in implementing the rules at state level which needs to be worked upon. He emphasized that the State Boards should start working on the problem and as a first step should write letters to bulk generators. He also mentioned that for the time being only collection/dismantling units would be sufficient for the north eastern states as the quantum of waste generation is not much.



He also spoke about some initiatives by bulk consumers to streamline their e-waste disposal mechanism.

Mr. Satish Sinha, Associate Director, Toxics Link

Need for assessment and possible financial mechanisms

Mr. Sinha began his talk by stressing on the fact that assessment has benefits. In case of e-waste, it is important to carry out assessments because until and unless magnitude of the issue is known, finding solutions might be difficult. When we choose products to be included in the Assessment study, it is important to consider two factors – one is the products which have high penetration and short life span and the second is the toxic constituents of the products. Electronic and electrical gadgets have penetrated both urban and rural markets in India and also in the North east region. With the high obsolescence rate of these gadgets, e-waste is one of the fastest growing waste streams and there is a pressing need to put a figure on these through waste assessment.

Satish also brought out the fact that more than 70% of the e-waste in India is generated by the bulk consumers like Govt. offices, Public and Private sectors. In India, major challenge is lack of infrastructure for formal collection and recycling, but we do have a very strong collection mechanism in the informal network. Hence it is important to use some of these resources to develop formal collection infrastructure to ensure more e-waste flows into the clean channel. Recycling infrastructure will come up depending on the economic viability.

He also discussed the importance of refurbishment. If waste could be refurbished and put back into the system, it is the best way to reduce it. Instead of manufacturing new one, if we could reuse the old one, it would save a lot of energy and money.

He then stressed on the fact that assessment eases the decision making process but also requires a lot of technical expertise. There could be various techniques or methodology of doing assessment like the Market supply method or Penetration method.

He concluded by saying that State Boards have a mandate to carry out e-waste assessment in their respective states. Toxics Link would be happy to provide technical support to incase it is required.

Q and A on 1st Technical Session:

Are there any particular norms or ways of monitoring the emissions from the e-waste?

Satish Sinha – No, there are no separate norms for monitoring. The norms to be followed are that of ambient air quality, water quality etc. similar to other industries.

Has there been any statistical study on the health impacts from e-waste

Satish Sinha – The health impacts of the toxic elements like lead and mercury have been studied quite extensively. It is a known fact that e-waste contains cocktail of chemicals and health and environmental impacts of those chemicals are also known. Internationally there have been studies to document these, but in India it is difficult as some of these toxic materials have long term health impacts and involvement of migrant labourers makes it difficult to study it.

Why are lighting equipments not included in e-waste rules?

Satish Sinha – Management of CFL's, bulbs etc. is very complex. For a country like India, where ewaste itself is so new, including something so complicated could have diluted the impact. EPR being a new concept, there was discussion while framing the Rules to keep the list of products covered small and expand it later. The government is also looking a separate legal framework to manage lighting equipments.

The technology for setting up infrastructure for CFL or tubelight recycling is expensive and the industry feels that the market for these lighting equipments may not last as alternates have already emerged. Hence, it is not feasible to invest in the technology at the moment.

Will the WEEE as well products from Small and Medium Enterprises (SME's) be covered under ewaste rules?

Satish Sinha – Though SME's have been excluded from the purview of the rules, products and waste generated from them are covered under the rules if they fall under Schedule I or II. This clause is only applicable for SMEs who are producers or manufacturers and SME recyclers will be covered.

Technical Session II

This session mainly had two presentations focusing on Extended Producers Responsibility and Recycling opportunities in the state.

Ms. Priti Mahesh, Senior Coordinator, Toxics Link

EPR and Takeback: Reality Check

Ms. Mahesh began her presentation by defining EPR and its salient features. She said that as per the E-waste Rules 2011, Producers have to take authorization only from that State Board where they either have a registered office/manufacturing unit. The Rules specify that the producers need to

- Seek authorization from State PCB's,
- Collect e-waste from consumers and the manufacturing process,
- Set up collection centers individually or collectively,
- Finance the system meeting the cost involved for sound management of e-waste,
- Keep the info transparent, provide contact details of authorized collection centers to consumers,
- Create awareness.

Priti then stressed upon the importance of the EPR principle. The objective behind introducing the Rules was setting up of clean channel and increase material flow to formal units. EPR in the Rules would ensure that the Producers invest in making products which are designed for recycling and



have lesser toxic footprints. OEM's have a large and direct reach to consumers and hence it would be easier for them to set up a clean channel which will cater to the large population in the country. It would also bring in transparency into public domain and improve the recycling efficiency of e-waste.

Elaborating on her topic, she said that even after 2 years since the notification of the Rules, there is no visible evidence of EPR on ground and the implementation is in a

sorry state. She then shared with the participants some finding from the study last year that had been done to assess the actions taken by producers in fulfilling their responsibility under the E-waste Rules. 40% brands surveyed did not have any physical collection centers and many of the brands surveyed did not even have any take back policy. There are issues of inadequate collection centers, lack of convenient drop boxes for home and individual consumers, with no incentive for the consumer to join the clean channel. Awareness drive has been also very dismal.

She pointed out that SPCB's have a very vital role to play in implementation of rules. But in order to assess the producers, they first need to know their producers. Rules have kept it quite open for state boards to decide their action points. Rules don't talk about targets on producers; therefore SPCB's could put their own limits. Also, they can decide if a producer has established adequate collection points in their respective states or not.

She also talked about financial mechanism in EPR. There are two kinds of waste – one with positive value like mobile phone, laptops etc and other with negative value like CFL's etc. For positive goods, there could be something like advanced deposit fees and for negative goods, advanced recycling fees. For better implementation of EPR, State Boards must have list of producers operating in their states which they could get either from sales tax department or any big dealer operating in the state. E-waste issue is very new and complex and hence, requires clarity for better implementation of rules.

Mr. Arjun Mehta, Sims Recycling Solutions

Changes and opportunities in the Recycling infrastructure in the country

Mr. Mehta started his talk by introducing SIMS, its global presence and the work areas. Sims is one of the biggest e-waste recycling companies in India, having units at three sites – Noida, Bangalore and Chennai and a pan India coverage in terms of collection.

Sims works in three areas – Asset Management, Asset Recovery and Recycling of e-waste. The company is capable of processing waste listed in the Schedule I and II as per the rules and also other e-waste not listed. It



believes in working in partnership with state boards, civil society organization and OEM's. Arjun stressed on the fact that it is important to have market analysis of the north eastern regions so that feasibility of establishing a collection/dismantling/recycling unit could be assessed. He also stressed on importance of recycling of e-waste.

Arjun was keen to understand the integration of the informal sector in the channel as unorganized sector are the biggest competitors in the market. He expected at the end of the workshop, some feasible roadmap could be decided so that Sims could contribute to sustainable future of the north east.

Q and A on 2nd Technical Session:

Since the Producers are mandated to get authorization in states where they have registered office, are they answerable in other states as well where they sell products? If they do not answer, can they be penalized?

Priti Mahesh- The Producers have to fulfill their responsibilities of EPR in each state where they sell products and incase they do not do so, they can be penalized under Environment Protection Act, 1986.

In the formalized informal groups- formal group linkage, isn't there a risk that the material may flow back to the informal chain, as the formalized informal groups may get better price there? How to prevent that?

Priti- Though these linkages are made, the formalized informal groups are open to sell material to the highest bidder among the formal recyclers. Moreover, the SPCBs have a big role to play in monitoring and making sure that the material stays in the clean channel. It is important therefore to map the downstream flow.

Is anyone made responsible for the assembled products, i.e. unbranded products?

Satish- Though the products are assembled or unbranded, most components are branded. Hence the responsibility lies with those brands.

What is the minimum quantity of e-waste for arranging a pick up from a particular location? Does SIMS pick up dismantled e-waste as well?

Arjun- The minimum quantity will entirely depend on the distance and logistics costs. Regarding dismantled e-waste, though SIMS hasn't done it yet, it is open to take those back and transport them safely to their plant.

Technical session – III

The third and the last session of the day focused on understanding the situation in the states in the North East India. Presentations were made by the PCBs officials, in which they shared the work done in their states, challenges faced and lesson learnt.

P. C. Lalmuanpuii, Assistant Environmental Engineer, Mizoram State Pollution Control Board

Ms Lalmuanpuii began her presentation by stating that e-waste management is very poor in Mizoram, with no collection, dismantling or recycling facilities in the state. The problem is compounded with the fact that they have substandard products coming in from Myanmar, Bangladesh etc. Being cheaper than the branded products, many people buy these imported products which have very short life span. She elaborated the problem in the state of Mizoram and said that e-waste is usually being disposed of with the municipal waste and sent to the landfills. Her major concern was that public is not aware about the issue. According to her, for effective implementation, mass awareness is there first step.

Ms Lalmuanpuii mentioned about the inventory study done by Mizoram board to assess the waste generation in the state. The study done in 2010, covering Aizawl city & Lunglei town, estimated around 18000 thousand tonnes of E-waste is generated in the state. Lalmuanpuii opined that Mizoram may not need an individual collection/dismantling unit and North east can probably have a common one in Guwahati. She added that there is probably a need to build capacity on the issue in the state on the issue.

Yanathung Kithan, Research Associate, Nagaland Pollution Control Board

Mr. Kithan briefed the participants about the scenario in Nagaland, which has no collection/dismantling/recycling units. In the state, scrapdealers are the main collectors of all kinds of waste including e-waste. They collect the waste from various sources and common bins and take it to the landfill for dumping. On the dumping ground, e-waste is openly burnt along with the other wastes. They have few shops in the state which refurbishes electronics. But these shops keep on accumulating circuit boards and computers not knowing what to do of it. This is the reason; finally everything ends up at landfill.

Electronic gadgets in the state mainy come from China which are poor in quality and have a very short life span. Lack of awareness among the public adds to the problem.

T. Manlong, Assistant Environment Engineer, Arunachal Pradesh

Mr. Manlong said that Arunachal is the largest amongst the seven sisters, yet population of the state is the least. This is the reason; generation of e-waste is also minimal. Like other states in the North

east, E-waste is being mixed with the municipal waste and taken to the landfills. Till date no inventorization of e-waste has been done by the state pollution control board because the rules are new and understanding them would require some time. Due to lack of awareness and no initiatives by the state board, there is not much done of the issue till date. No collection or dismantling units are there as well.

S. Syiem, Assistant Environment Engineer, Meghalaya Pollution Control Board

Meghalaya Pollution Control Board did a small inventory in 2009 in the capital city of Shillong. The methodology adopted was same as the one used by Maharashtra Pollution Control Board. The result was quite interesting. Estimated e-waste generation in the year 2010 was 446 MT from Shillong alone which is a very rough calculation. But it gave an idea of the problem of e-waste in the near future. In the state, resale and refurbishing is a common practice but due to lack of awareness among the masses, most of the end of life e-waste goes to the landfill.

Bangajit Singh, Assistant Environment Engineer, Manipur Pollution Control Board

Bangajit talked on similar lines to the previous state boards. Manipur has also not done any inventory and is yet to understand the details of the rules. Repair shops have circuit boards and chips piled up without knowing what to do about it. Most of the e-waste ends up at the landfill.



Wrap up

Satish Sinha concluded the day one session by saying that some amount of work has been done in the north east but a lot more needs to be done for effective management of E-waste in the region. It was interesting to know the scenario in north east which is quite different from the rest of the country. On one side, we have been talking about e-waste being a resource and on the other hand, it is being dumped and burnt openly at landfill sites.

<u>Chapter II</u>

E-waste – Creating Changes

– Day 2

he workshop began with a quick recap on the previous day's deliberations and discussions on how to work together to find way ahead. Mr. Satish Sinha, Associate Director, Toxics Link briefed the participants about objective for the second day session, in which the participants would mainly work in small groups to find solutions to the some of the problems prevalent in region.

Three working groups were made and each group had to work on three areas:

- How to create collection and processing system
- Creating awareness
- Setting up monitoring mechanism

The Groups had to also keep some of the expectations expressed on the first day in mind while discussing the issues.

Two hours were given to each group for brainstorming on the above three work areas. At the end of the discussion, groups had to make presentations on their ideas and possible options for safe management of e-waste. Diversity in each group helped in getting different point of views and solution to some of the problems. Key points that came out in each presentation are as follows:

Group 1

- Dealers should have collection points
- Urban Local Bodies (ULB's) should set up collection points
- Training the informal sector
- Issue letter to bulk consumers asking them about the e-waste inventory
- Awareness programs through Eco clubs in schools
- Mass awareness through radio, tv ads, posters, pamphlets
- E-waste assessment in the state to understand the quantum or magnitude of waste



- List of producers operating in the state so that they could be penalized
- Set targets for the producers
- Incentives for end users like green certificate, gift vouchers, buy back policy etc.

Group 2

- Written intimation to producers/brands for market or sales information by SPCB
- SPCB's should tie up with ULB's for setting up collection points or centres
- Mass awareness through media involvement
- Training of informal sector by civil society organizations

Group 3

- SPCB's to write to producers to ask them about what have they done in their respective states and to ask to set up collection points in all district headquarters.
- Write letters to producers asking them to involve informal sector in the collection
- Update SPCB websites regarding information on ewaste rules
- Mass awareness through media, radio, tv ads
- School awareness programs through eco clubs and using resources of NGC & NEAC
- Written intimation to bulk consumers
- E-waste assessment in the state with the help of CPCB and Toxics Link

Discussions

During the discussions, it was found that Assam has done some work in the E-waste area. They have inventorized e-waste in the entire state which came out to be 14 MT per annum. They have 3 authorized collection centers but one has closed down. Five brands – Sony, Dell, Samsung, LG and Philips are collecting their products from entire north east and taking it back to Guwahati where they are storing it. Assam Govt. has also moved a proposal for Treatment Storage Disposal Facility in the state and has received 5 Expression of Interest (EOI).

One and half day workshop gave a platform to all the 6 pollution control boards to share their experiences and exchange ideas which could be implemented. Toxics Link has worked on the issue for a long time and has a lot of information material on e-waste. So if anyone is interested in those IEC materials, TL would be glad to provide them with it. To start with the work, all the SPCB's first should update their website on e-waste rules





Conclusion

The State Pollution Control Boards decided to take the issue forward in their respective states. All the other stakeholders present in the workshop decided to contribute. The following activities/ initiatives were identified as tasks which could be taken up in future.

IMMEDIATE GOAL

- Updating the State Pollution Control Board websites
- Public notices to bulk generators
- Identify the producers operating in the state
- Public Notice on E-waste
- School awareness programs

SHORT TERM GOAL

- Public awareness programs on newspaper, radio and television
- E-waste Assessment
- Write letters to producers asking them on collection mechanism
- Feasibility of setting up collection centre
- Initiate dialogue with ULBs for setting up collection points

LONG TERM GOAL

- Integration of informal sector
- Initiating incentives for end users
- Feasibility of setting up dismantling units
- Green certification Program
- Setting targets for Producers
- Awareness workshops for Bulk
 Consumers
- Developing Monitoring tools

Participation List

Name	Organization
Z. Changsan	CPCB, Meghalaya
S.K. Dutta	CPCB, Meghalaya
B K Barauh	Assam Pollution Control Board
M M Borah	Assam Pollution Control Board
Akangmeren Imchen	Nagaland Pollution Control Board
Yanathung Kithan	Nagaland Pollution Control Board
S Syiem	Meghalaya Pollution Control Board
M. N. Warbah	Meghalaya Pollution Control Board
Lucy Ngurkhumi Sailo	Mizoram Pollution Control Board
P C Lalmuanpuii	Mizoram Pollution Control Board
Robin Dohu	Dept. of Forest & Envn., Arunachal Pradesh
Bangajit Singh	Manipur Pollution Control Board
S. Bhattacharjee	Dept. of Forest & Envn., Meghalaya
N.Tam	Arunachal Pradesh Pollution Control Board
T. Manlong	Arunachal Pradesh Pollution Control Board
Rajendra Gurung	ECOSS
Roto Chobin	ZIRO
Yojna Lama	ECOSS
Dhritiman Das	CML
Amarjyoti Kashyap	ENVIRON
Arjun Mehta	Sims Recycling Solutions

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