

Electronics City's Clean e-Waste Channel: Proceedings

Meetings held on September 20 & 21, 2006

Contents

1. Introduction
2. Presentations
3. Working Sessions

1 Introduction

The phenomenal growth of the IT industry in the city of Bangalore has another side to it. The average life span of PCs in the IT industry is on average three years, resulting in a high obsolescence rate. Studies in Bangalore show that companies are struggling with the disposal of e-waste for example PCs, printers and in general any obsolete electric or electronic equipment. Some companies are storing, or donating it, but most commonly disposing it through open auctions.

The e-waste invariably reaches the informal recyclers where metals like gold, copper etc. are recovered using non-scientific processes and dangerous chemicals. The hazards posed by the recycling of e-waste in such risky ways can result in severe health and environmental impacts.

The Electronics City is home of over 150 companies including several of the biggest electronic product brands, all large consumers of ICT with a total of approx. 60,000 staff. ELCIA is the umbrella organization representing all the companies operating in Electronics City, and is already taking proactive steps in setting high environmental standards for its members. It has organized various eco-friendly programmes, including a waste sensitization program on plastics.

Recognizing that the e-waste problem will become more acute in the near future, ELCIA organized a two day event for its members on September 20th & 21st to introduce the concept of a 'Clean e-Waste Channel' and demonstrated that e-waste can be disposed of responsibly.

A 'Clean e-Waste Channel' is 1) a convenient collection and disposal system for large and small consumers to return all their e-waste safely, 2) a voluntary system for modern and concerned producers to care about their product beyond its useful life and 3) a financially secure system that makes environmentally and socially responsible e-waste recycling viable.

The event was also supported by the Indo-German-Swiss e-Waste Initiative and Saahas. The Initiative has been involved in the e-waste issue in Bangalore for over the past 3 years and initiated a number of activities such as a rapid assessment of the disposal and recycling activities in the city. Training programs for skills and technology up-gradation of the informal sector as well as the WEEE Care! awareness building campaign have also been some of the Initiative's projects in the city. The Initiative is also active in assisting the e-Waste Agency in Bangalore (EWA), in supporting the Ministry of Environment and Forest (MoEF) in defining the national e-waste strategy (including the development of an e-waste legislation) and in advising the hardware industry to lead the setting up of a comprehensive e-waste management system.

The workshop was hosted by Infosys and held on the Infosys campus at Electronics City and was attended by facility managers from several companies in Electronics City, as well as CPCB and KSPCB officials.

One of the major outcomes of the event was the decision by ELCIA members to formulate a 'Code of Conduct' for the companies in Electronics City which would define their commitment towards proper e-waste management. Another important issue discussed was donation of old computers for developmental and educational purposes, led by Anchorage, an NGO active in this domain. Finally, it was decided to study the requirements for a permanent collection system in Electronics City, implementing India's first Clean e-Waste Channel.

Simultaneously, along with the half-day workshop, there was the first public e-waste collection event where members and their employees had an opportunity to bring back their e-waste.

More information about e-waste and e-waste management may be found on the website of the Indo-German-Swiss e-Waste Initiative at www.e-waste.in, or on the e-Waste Agency's website at www.ewa.co.in.

2 Presentations

- "e-Waste Management in Electronics City : ELCIA's commitment" (Charles Hawkes, VP ELCIA) > (*resume*)
- "Setting up a Clean e-Waste Channel in Electronics City" (David Rochat, EMPA) > (*resume*)
- "PRO¹ Role in the Establishment of a Clean e-Waste Channel based on the European Experience" (Vinnie Mehta, MAIT) > (*resume*)

e-Waste Management in Electronics City : ELCIA's commitment, Charles Hawkes



Setting up a Clean e-Waste Channel in Electronics City, David Rochat



PRO Role in the Establishment of a Clean e-Waste Channel based on the European Experience, Vinnie Mehta



Producer Responsible Organisation (PRO)
- role in setting up of clean e-waste channel

Vinnie Mehta
Executive Director
Manufacturer's Association for Information Technology
September 20, 2006; Bangalore

¹ Producer Responsibility Organisation

3 Working Sessions

Four working sessions were organized, with the objective to study some issues related to the implementation of a Clean e-Waste Channel in Electronics City. The topics which were discussed and the outcome are as follows:

a Custom Bonded Equipment: STPI procedures

Value of the Customs Duty: At the moment, if a company wants to de-bond its equipment, the option of paying the custom duty is not used as the value of the duty is higher than the value of the equipment at the moment of de-bonding. A suggested solution is to fix the value of the custom duty to be paid based on the market value of the equipment at the time of de-bonding. This value could be fixed by NASSCOM and be monitored by STPI.

- De-bonding by Destruction of Equipments: The other option for de-bonding equipment is its physical destruction by custom officers. This option is disliked, as it is done randomly by breaking equipment which complicates the recycler's task, and sometimes makes it dangerous. One suggested solution is to replace the word "destruction" by "recycling" in the de-bonding options and having recyclers authorised by STPI to make the equipments unusable, e.g. by de-phasing them. To simplify the paper work and for the recyclers to obtain clearance by a single window authority, the future Producer Responsibility Organisation (PRO) would be in charge of implementing such a procedure. Control and monitoring would be done by the State Pollution Control Board.
- Follow-up of the de-bonded material: Once the equipments are given either to donation channels or to recycling channels, there must be a control of material flows to make sure that the authorised channels are effectively respected. Typically, this would be a task for the future PRO, and the monitoring of this measure would also be the PRO's responsibility, controlled by relevant administration bodies.

Comment: also not a very useful term unless it explicitly means the recovery of materials only

Comment: ??? term not defined

Comment: I checked the literature: PRO is the Producer Responsibility Organisation not Responsible

Comment: that's only realistic for the emission control and even that might be outsourced to a private control body

Comment: more than one Clean eWaste Channel???

b Contractual compliance: How does the recycler fulfil industry's requirements?

The following issues were discussed:

- Three quotations required: as there are currently only two authorised recyclers, this measure is not possible to implement. Auctions are not required, so that this shouldn't be an issue at all.
- High standards: though approved by KSPCB and CPCB, companies may expect higher standards, especially in terms of EHS aspects, ISO 14'000 and ISO 9'000 certification, OSHAs for recyclers etc. Monitoring should be done by audits led by the e-waste generator
- Single window approach: generally, multinational companies have a process which involves both their EHS department as well as their commercial/purchase/logistics department. The signatory of Form 9 of the Hazardous Waste Rules may be a single authority.
- Liability: Generators, transporters, recyclers and downstream recyclers are all liable for the safe disposal of e-waste. The risks for each step of the recycling chain must be defined, and proper liability insurance defined.
- Data destruction: It is the generator's responsibility to destroy the logos and data contained in the equipments. As knowledge, infrastructure or workforce for doing so may not be available; the generator may outsource this to the recycler.

Comment: ??? why?

Comment: this should also cover one audit acceptable for many companies via e.g. PRO

c Donation of computers: what channels for reusing equipment for educational and development purposes?

Often, equipment obsolete for companies are still good for individual users, especially for training and educational activities. Several organisations, mostly NGOs, can use such equipment in rural programmes etc. As it is sometimes difficult to track the equipment once it is donated and as some NGOs face problems regarding the quality of the donated equipments, the following issues have been raised:

- ensuring the quality of the donation (computer and support of their use)
 - conditions (power, ups, etc)
 - Skills of the final user (training of teachers, etc)
 - Conditions of the computers
- Responsibility of the donated system
- Security of donations
- Recycling commitment
- Sustainability and revenue model

Proposed solutions to these issues are the following:

- an entity or agency should be enabled to ensure these issues. ELCIA is suggested for Electronics City, with proposed tasks.
 - Identify good reuse
 - Training of the user, security and final recycling
 - Guidelines for donations
 - Classification of computer
- A fee could be charged by the NGO taking the donated equipment in order to ensure proper use of it.
- Revenue model based on vocational training.
- Government bodies should be involved, such as IT department, Education department, RDPR

d Code of Conduct for e-waste management in Electronics City: defining ELCIA member's commitment towards e-waste management.

The need for a Code of Conduct for members of ELCIA was expressed, especially for harmonizing the requirements of each company towards recycling, defining the duties and commitment of members, monitoring of the e-waste management system, etc.

The structure of the Code of Conduct should be the following:

- General principals members must commit to
- Articles defining standards for:
 - Green procurement policies (including disposal, packaging, etc..)
 - Recycling (includes recyclers, reuse, etc.)
 - Monitoring and control
 - Local infrastructure (collection, disposal, transport, etc.)
 - Membership
 - Financing of the system (fees...)
 - Reviewing and amending
 - Policy

Comment: I find the CoC very ambitious. I don't know if the inclusion of Green Procurement, Donation, ... will make it a manageable exercise

Also, the following deadlines were fixed:

- ELCIA prepares a draft by end of October
- The draft is circulated within a core group for consultation until November 27 2006
- ELCIA finalises de Code of Conduct by end of November 2006
- The Code of Conduct is adopted through an elective process within all ELCIA members by end of 2006

4 Annex

Clean e-Waste Channels (proposed principles)

What is it?

- it's a convenient collection and disposal system for large and small consumers to return all their e-waste safely.
- it's a voluntary system for modern and concerned producers to care for their product beyond its useful life.

What roles?

... **for the producer** (importing, assembling or manufacturing electronic & electrical equipment)

- The Clean e-Waste Channel is based on a voluntary agreement amongst producers to organize the take back of e-waste only through authorized collection points and its disposal only through authorized recyclers.
- The participating producers may opt for an individual or collective solution; the latter may be managed by a producer responsibility organisation (PRO) instituted by the signing participants.
- Producers insure that the Clean e-Waste Channels are viable and may decide to introduce transparent financing for unprofitable recycling processes schemes if required.

... **for the consumer** (returning end of useful life equipment):

- Large consumers may have B2B arrangements with the Clean e-Waste Channel
- private / household consumers return their end-of-life equipment at least free of cost to dedicated collection points

... **for the recycler**

- Authorization of the recyclers involved in handling e-waste includes both contractual arrangements with the PRO or individual producers for receiving the e-waste as well as licences from the SPCB where required
- recyclers are responsible also for the proper processing of their downstream fraction mainly those critical items as mentioned in the Annex of the EU WEEE directives



E-WASTE MANAGEMENT @ ELECTRONICS CITY

Infosys

CURRENT SCENARIO

- Lack of a waste management system
- Absence of segregation and common collection point
- Lack of authentic information
- E-waste management - a challenge
 - Customs regulations on bonding
 - Non-availability of land fill areas
 - Non-availability of information on approved E-waste vendors

Infosys

THE NEED OF THE HOUR

- A robust waste management system which should be scalable and sustainable
- Common collection facilities
- Information dissemination – Legal or regulatory issues, details on authorized recyclers etc.,
- An integrated approach to E-waste Management

Infosys

ELCIA'S PROPOSAL – 3 PHASE PROGRAM


- PHASE 1:
 - Formulate E-waste policy for ELCIA
 - Establish a sustainable waste management system which involves segregation at source. E-waste being a major challenge for industries in ELCIA focus will be on E-waste management
 - Establish a common collection point
 - Establish a Helpdesk which will guide companies on waste management and provide contact information

Infosys

ELCIA'S PROPOSAL – 3 PHASE PROGRAM

- PHASE 2:
 - ELCIA to be certified for ISO 14001

- PHASE 3:
 - Establish an E-waste processing centre


Infosys 

POLICY ELEMENTS

- Commitment to demonstration and sharing of best practices
- Prevention of pollution
- Adherence to applicable legislations
- Safe disposal of waste
- Continual Improvement

Infosys 

Thank you!

Infosys 



Indo Swiss German e-Waste Initiative

**Steps in Solving the e-Waste Problem:
How the Indian Industry Could Take the Lead**


**Implementing the 1st Clean e-Waste Channel
in Electronics City**

David Rochat, e-waste project coordinator
Swiss Global e-Waste Programme "Knowledge Partnerships in e-Waste Recycling"
EMPA • Swiss Federal Laboratories for Materials Science and Technology
www.empa.ch
St Gallen/ Switzerland

the e-waste programme 


introduction

- **seco: Swiss State Secretariat for Economic Affairs**
 - akin to ministry of commerce & economy >> federal authority for all core issues relating to economic policy.
 - directorate for "Economic Development Cooperation" of seco provides assistance to projects promoting sustainable economic development and the integration of developing and transition companies into the global economy.
- **EMPA: Swiss Federal Laboratories for Materials Testing & Research**
 - independent, neutral institution for multidisciplinary research into sustainable materials and systems engineering.
 - competence center for e-waste hosted by the *technology and society laboratory*
 - technical monitoring & control centre for electrical and electronic waste


the e-waste programme 

IN-DE-CH e-Waste Initiative: setup & objectives

- The Swiss contribution is part of the IN-CH-DE E-waste Initiative



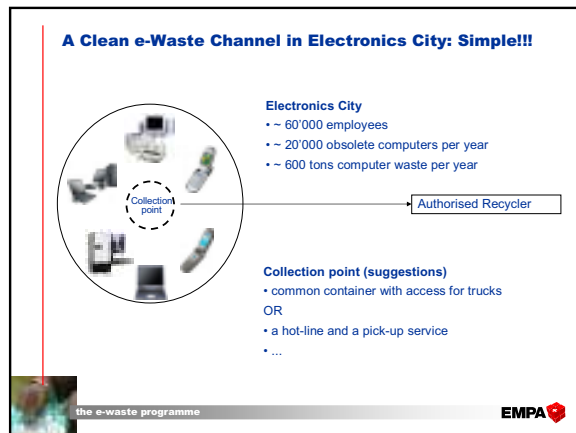
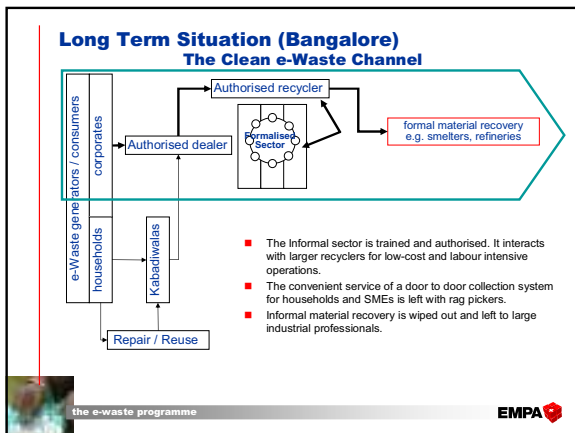
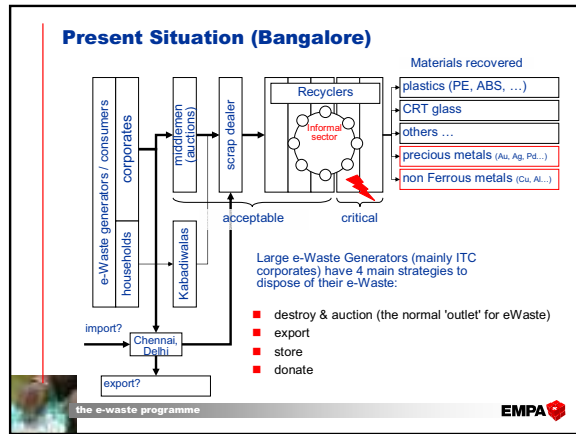
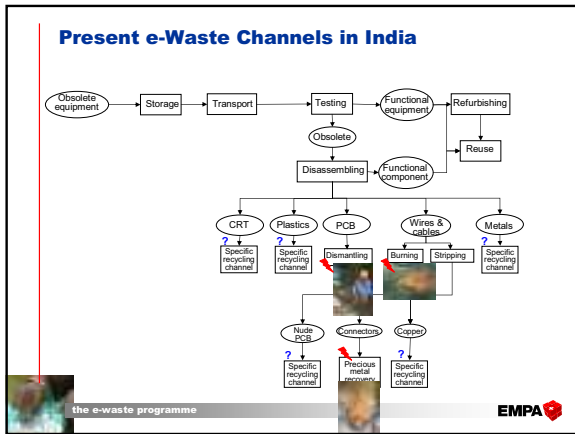
- reduce the risks to the population and the pollution of the environment resulting from unsafe e-waste handling.
- focus on knowledge transfer to and skills upgrade of all involved stakeholders through trainings and seminars.
- target mainly the existing informal recyclers allowing for their maximum but safe participation in future e-waste management by facilitating their evolution and integration in formal structures.

the e-waste programme 

The Need to Solve a Problem




the e-waste programme 



The Building Blocks of a “Clean Channel”


“Building Block”	Responsible	Description
Awareness & Education	NGOs, Associations	Educates stakeholders to “play according to the rules”
Technologies & Know-how	Industry (Recyclers)	Improves management skills, recycling efficiency...
Monitoring & Compliance	SPCB, Industry	Legal compliance
Material flows	Industry (Producers)	Contractual compliance
Legislation	MoEF, CPCB	Defines responsibilities and duties
Financing ?	Producer > Consumer	Keeps the non-profitable operations working!
...

Parts of the system → Who builds it? Who drives it? Who coordinates it?

the e-waste programme 

Why Should the Industry Take the Lead?


- “Recycler owned” system
 - System driven by profit only → Risk of “cherry-picking”. Who takes care of non-valuable and/or hazardous fractions?
- “Government owned” system
 - Risk of exhaustive regulation, paper work, inefficiency, extra taxes... No incentive for a working system.
- “Producer owned” system
 - CSR, control on materials, green image, responsibility not dictated by a third party...

the e-waste programme 

How Can the Industry Take the Lead?

- There is no ready made solution, but inspiration can be found with those a way ahead
- Find a solution jointly, the task may be delegated to representative agency (“common platform, think tank, association, PRO, etc.”)
 - Defining and allocating responsibilities
 - consumer convenience
 - secured financing
 - monitoring & compliance
- Adopt a “road map” giving the steps to build the system, e.g.:
 - Step 1: Organize and Supervise a Trial Run
 - Step 2: Formalize the Operation
 - Step 3: Expand System's Reach and Secure Financing
 - Step 4: Consolidate and Disseminate the e-Waste Management System
 - ...


... and more...

the e-waste programme 

Step 1: Organise and Supervise a Trial Run September 20, Electronics City

Subjects to be discussed today:

- Custom bonded issues: how to easily shift e-waste from companies warehouses to the collection point?
- Donation: how to maximise the reuse of equipments for development and education purposes?
- Contractual compliance: What agreement with the recycler. The industries role in auditing.
- Code of Conduct: principles established by the Industry

the e-waste programme 

- Keep developing Clean e-Waste Channels
- ...It's simple, it's scalable
- ...the fast track to experience

www.e-waste.in
www.ewa.co.in

david.rochat@empa.ch

Thank you for your Attention!



the e-waste programme





Producer Responsible Organisation (PRO) - role in setting up of clean e-waste channel

Vinnie Mehta
Executive Director
Manufacturer's Association for Information Technology
September 20, 2006; Bangalore

What is a PRO?

- The EC directive on Waste from Electronics and Electrical Equipment dated January 27, 2003 and in force since July 01, 2006 makes it mandatory for electrical and electronics manufacturers and importers to take back the goods discarded by the users.
- Importers and manufacturers of appliances have to comply with this obligation
 - > either by become a member of a collective take back system or
 - > by drawing up individual waste management plan.
- The PRO or the 'Collective take-back' mechanism is thus a direct consequence of the response of the manufacturers and importers of IT products to collectively meet their take-back obligations
- Essentially Not-for-Profit in character, founded and managed by the industry, the PROs operate with the support of national authorities.

2



Responsibilities of a PRO

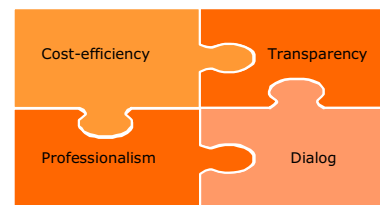
- PROs or Collective take back systems set up a complete e-waste management system that carries out the following functions:
- Takes on the producers' legal obligations
- Manages the data collection and reporting
- Negotiates contracts with operators – transporters, recyclers
- Arranges logistics
- Arranges recycling
- Manages the financing
- Maintains the audit trails

Undertaking the entire e-waste management responsibility of many manufacturers and importers together reduces the costs, compared to individual solutions

3

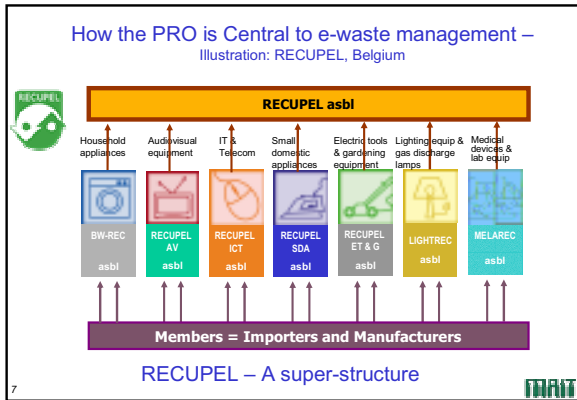
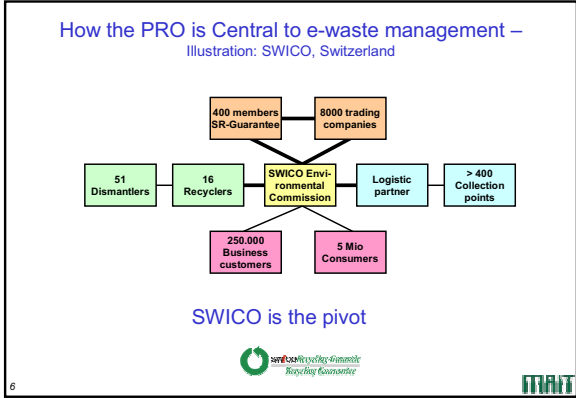
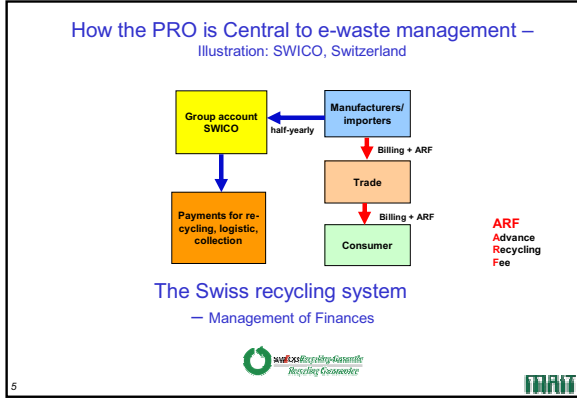


Value proposition of a PRO



4





- ### Lessons for India
- A PRO can be a much effective e-waste management system compared to individual companies
 - A PRO has better control and bargaining position with
 - > Logistics agencies
 - > Recyclers
 - > Government
 - PRO can work as effective means of building bridges with the users and the common man
 - PRO can help benchmark practices
- 8

Challenges for India

- The PRO model and the entire e-waste management system in Europe is funded by the consumers
- How do we invent a model for India?



Suggestions and inputs are welcome...

Thank You!