



Electronics, Environmental Requirements and Eco-design: Overview of Developments in India

Asia Eco-Design Electronics
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Brussels

Rajoo Goel, Secretary General,
ELCINA Electronic Industries Association of India

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Indian Market & Electronics Industry

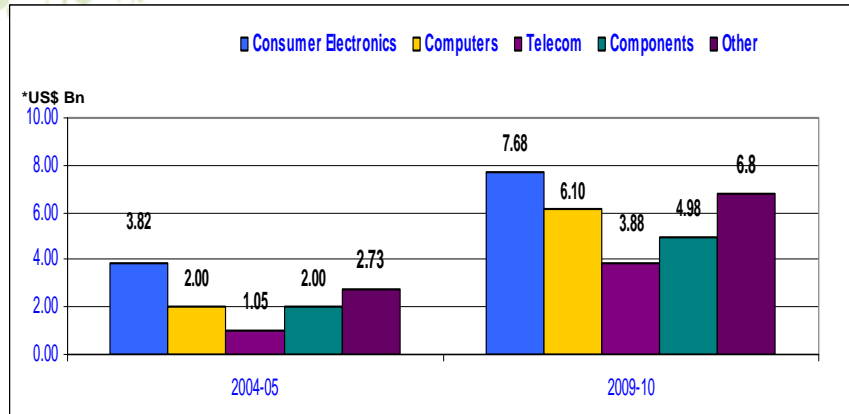
- Electronics is the largest and fastest growing mfg industry, having surpassed 1.2 Trillion US \$ – growing @7% projected to touch US\$2400 by 2015
 - *Indian market US\$ 25Bn – 2% of global production*
 - Demand growing by ~ 25%+ projected at US\$ 320 Bn in 2015; *13.4% of global production*
 - *Present Production @12.7 Bn - 50% of domestic demand!*
 - Share of Electronics Hardware Mfg in GDP = 1.7% - projected to grow to 12% by 2015 – at par with other South Asian countries
 - Signatory to ITA-1 and many FTAs allowing duty free import of electronic components and equipment
 - Recent trend towards increased investments in hardware –major players setting up base in India-Nokia, Flextronics, Celestica...
 - Domestic production should grow at 25+% per annum - could grow anywhere between ~20-30%

Sources:ISA-Frost & Sullivan Report;
Ministry of IT, Govt of India Annual Report 2005-06

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Segment wise Production for 2010

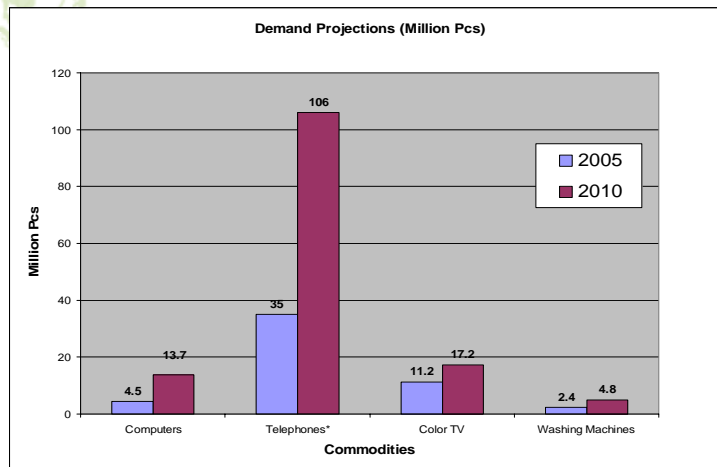


Electronics Production 2005-06 US\$12.7 Bn 2009-10 ~US\$29.44 Bn
Growth @ 20%+ per annum

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DEMAND PROJECTIONS OF MAJOR PRODUCTS



* Cellular + Fixed


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India –The Present Situation

- Unprecedented market expansion with burgeoning demand-supply gap
- A major dumping ground for e-waste –concentrated in large metros and spreading to 2 Tier cities
- Informal and clandestine backyard recycling –serious hazard to health and environment
- Government has not enacted appropriate legislation- a WEEE draft is now being finalised
- Large companies and MNCs are close to achieving all EMS compliances and setting best practices
- Pressure due to International Regulations (EU, Japan) & Buyers in Developed countries
- Some best practice benchmarks and high quality professionals available
- Training, technical support, and eco design awareness required to pave the way to achieve environmental compliances

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E-Waste Generation in India

- India a small generator of e-waste [0.15 Mn Tons] compared to developed economies – 7 to 8 Mn Tons in EU
- E-waste generation growing exponentially due to demand growth @25%+ per annum
- E-waste est 146,000 Tons  1,600,000 Tons p.a by 2012
- Factors driving e-waste generation
 - **Economic growth @ +8% -rising income- demand growth, shorter life cycles**
 - **Boom in service industry- BPOs – huge requirement for computers and high obsolescence**
 - **2nd largest mkt for cellphones 50 mn; 12 mn TVs; 5 Mn DVD/CD players and more....**
 - **E-Waste 'imported' for re-cycling – estimated at more than what is generated locally- Computer recycled in India for US\$2 compared to US\$20 in a developed country !**

Source:Maharashtra Pollution Control Board, Mumbai

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Handling of E-Waste

- Comes in as 2nd Hand products for charity / donation – finds way to Scrap dealers
- High Risk backyard operation with little risk awareness or protection- high occupational & environmental risks
- Most of the 'waste' is recycled –either as material or components for reuse –mostly ash goes to landfill
- The processes are highly hazardous to workers health- open roasting; acid baths; uncontrolled emission of toxics
- Some organized recyclers coming up- E-Parisaraa and Ash Recyclers in Bangalore authorised by State PCB
- International Legislation (RoHS, WEEE by EU) and Awareness are major drivers for change
- Organised recycling –could be a great opportunity !

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Informal E-Waste Recycling



Acid Washing



Cable Stripping



Copper Extraction



Electronic Scrap Dealer

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Status of Legislation on E-Waste

- Covered under Hazardous Wastes (Management & Handling) Rules 1989- amended in 2003 –covers all types of hazardous waste -List A & B Schedule 3 lists electronic items
- Defines waste and prohibits import except for processing & reuse of raw materials; permits donations of old computers to non-profit organisations
- Local governments (Pollution Control Boards) collect and dispose solid waste but do not handle electronic waste
- As per Basel Convention -Bans export from India but does not ban import from countries not signatories to Basel Convention;
- Supreme Court of India has banned import and All Imports of Waste require a license
- WEEE Legislation- similar to the European WEEE drafted by Ministry of Environment in collaboration with GTZ (Germany). RoHS Legislation under discussion. Indian companies following the EU RoHS
- Bureau of Indian Standards (BIS) has developed national standards for emissions and environmental testing

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Industry Initiatives & response

- **Industry Associations are collaborating actively to formulate a policy to manage e-waste**
 - ELCINA is working with DIT on safety/EMC/EMI; gathering members opinion on green electronics & establishing a viable policy;
 - Safety requirements to be mandated within 6 months followed by EMC/EMI
 - CEHA –Council of Associations – in collaboration with EMPA (Swiss organisation) have set up an E-waste working group to establish system of e-waste collection and disposal
- **Industry is actively working on RoHS and WEEE compliance- a study by ELCINA shows half the members are compliant**
- **Env Mgt activity initiated by some in 2001; gained momentum by 2003 and presently there is considerable focus on green supply chain, waste management and even eco design**
- **India study shows -Waste recycling done consciously by many units**
- **Companies have achieved savings in energy and water- eg.CDIL**

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Study by Postgraduate Students Linköpings University, Sweden

Preliminary Conclusions on requirements of Indian SMEs on Eco Design Tools

- Studied environmental awareness, conditions for implementation eco design & link between RoHS and eco design
- High awareness among senior/middle level managers; low among junior staff/ workers
- Awareness limited to RoHS - educated by their company
- Have gained by exposure to international markets
- See distinction between Eco Design and RoHS
- Feel that implementing eco design depends largely on customer requirement/ dictates
- Mixed view whether RoHS is a non tariff barrier or a tool for progress; feel it has increased environmental awareness

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International E-Waste initiatives in India

- Indo-German –Swiss e-waste initiative
 - Aims to document current e-waste handling in major Indian cities and develop knowledge base to mitigate hazards of improper recycling
 - Presently doing a pilot project in Bangalore on collection of ewaste
- UNEP- est in 2005 to reduce environmental and health impacts - focus on Mumbai
- Greenpeace Initiative – 2005 –aims to provide info on workplace & env contamination due to electronics recycling in India and Chinaion
- Wipro ; HP – initiatives for waste collect

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The Way Forward

- *Establish link between RoHS-WEEE-EuP and Eco Design – necessary for sustainability*
- Create Eco Design awareness by training and sharing experience between companies and countries
- Find solutions via product design – free of toxic content- Lead Free !
- Provide technology for recycling & test facilities
- Draft suitable legislation on 'E-Waste', Eco friendly products
- Implementation of Legislation – responsible collection and management of e-waste- involve Industry Associations & NGOs
- Generate Resources for training industry (SMEs) by Indian and international experts,
- Create national awareness on eco friendly products & e-waste

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Thank you for your
attention



ELCINA House, 422 Okhla Industrial Estate
New Delhi-110020(India)
Ph:26924597,26928053,51615985, Fax:+91(11)26923440
E-mail: elcina@vsnl.com; Website:www.elcina.com

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