

ASIA ECO-DESIGN ELECTRONICS (AEDE) COUNTRY REPORTS: EXECUTIVE SUMMARY

INDIA

Background

The Indian electronics hardware sector consists of more than 3500 manufacturing units and assorted clusters spread across the country employing over 3.5 million people. Future technology and consumption trends suggest that the share of information technology (IT) and electronics in India's gross domestic product and employment will increase significantly if this industry finds a place in the global manufacturing sphere. There is also a conspicuous asymmetry between hardware and software growth, with the latter outstripping the former.

Sales of personal computers (PCs), mobile phones, telecommunications (telecoms) accessories and a wide range of consumer products have also been increasing. The fastest growing segment is telecoms. India is set to become the world's second largest mobile telecom market by 2007, when the projected mobile phone subscribers will more than double from 100 million to 250 million.

Rapid diffusion of electronic products in India with rising consumption and product obsolescence has created a severe e-waste crisis. This is further aggravated by the large volumes of e-waste that is legally permitted to be imported. The total generated from waste electrical and electronic equipment (WEEE) in India amounts to about 146,000 tonnes per annum and is projected to rise to 1,600,000 tonnes by 2012. A majority of the recycling processes are carried out in backyard open smelters, inflicting severe damage to the environment and to human health. However, some non-government organisations (NGOs) and local firms have started organised training programmes on recycling and more recently modern facilities for recycling have been established.

Although it is not possible to predict the impact that the EU Directives (WEEE, RoHS, EuP) and the forthcoming national WEEE legislation may have on the volumes of e-waste in India, it is possible to infer that pressures on producers to take back obsolete items as well as to re-design products to meet the requirements of the Directives may well have a positive impact on the e-waste problem in India in the long run. However this hypothesis remains to be tested.

The Ministry of Environment and Forests (MoEF) is the national authority responsible for legislation regarding waste management and environmental protection. To date, hazardous waste management laws do not regulate e-waste and local governments who are responsible for the collection and disposal of municipal solid waste, play no role in the collection or disposal of e-waste. Hazardous waste in India is managed under the Hazardous Wastes (Management and Handling) Amendment Rules, 2003. A WEEE legislation called The WEEE (Management and Handling) Rules, 2006, is currently being drafted.

Implications of EU legislation on suppliers

- Compliance measures will require substantive investment from Indian companies covering costs of product re-design, re-tooling of production lines, new materials, new processes, product testing facilities (in-house and third parties), personnel training, consulting expenses, writing off discarded hazardous products and materials. As compliance standards keep rising, investment costs are bound to increase.
- Suppliers failing to meet compliance requirements risk being marginalised. Small and medium-sized enterprises (SMEs) not closely associated with the Original Equipment Manufacturers (OEMs) and Original Design Manufacturers (ODMs) are more vulnerable than others. The problem is further aggravated for SMEs by the prevalence of a multitude of requirements, lack of transparency in communicating these requirements and short deadlines for meeting them. Failure to comply by SMEs will result in loss of international sales and possibly a portion of domestic sales. Besides, non-compliance would result in penalties and/or refusal of product, leading to higher operational costs of higher inventory.
- The magnitude of unemployment following lay offs by non-compliant companies will depend on how fast the released employees can find work elsewhere and on the economic base of the location. With significant SME domination in Indian electronics industry, the net impact on employees in terms of job losses in the short term is most likely to be negative. Impact on women employees is also expected to be negative as there are a high percentage of females in the work force.

- In the event of a lack of investment and preparedness and with minimal government support, Indian industry could be at a competitive disadvantage relative to other countries like China and Thailand.

Gaps and needs for capacity building

To cope with compliance challenges, suppliers to electronics OEMs/end-users need to implement proper management systems, including:

- Providing timely and relevant information such as; monitoring systems, compliance evaluation and control measures; fine tuning internal communication and information systems; developing extensive external communication with customers, industry associations, national regulatory authorities and government agencies.
- Establishing effective planning systems including; strategies to phase out hazardous substances; investment in new production lines, processes, materials, testing capabilities, training and other requirements; strategic planning for re-designing products and production processes in tune with the needs of recycling, energy efficiency or other operational upgrading that may be directed by customers, OEMs or the final end-user. These may include planning for labelling of finished products as per WEEE or other mandatory stipulations.
- Planning for management and audit of quality and eco-design programmes.
- Integrating eco-design and green procurement into organisational processes.

In addition, the following technical needs have been identified:

- Understanding and tracking all relevant legislations and their implications
- Creating technical infrastructure and support systems (for eco-design, recycling, e-waste collection, treatment and disposal, etc.)
- Training industry on cleaner process technologies and transfer of know how.
- Training on operational aspects like product design, re-design, tooling and re-tooling, new materials and processes, product testing facilities and validation.
- Collecting and communicating life cycle related information including for EuP and other requirements such as energy management.

Capacity building measures

In the *short term* capacity building measures should focus on RoHS compliance and on-going development of well integrated information and communication systems. The most prudent approach would be to target a limited number of key suppliers who can transmit the learning to others in the supply chain (the Taiwanese model). Some of these short-term capacity building measures are:

- Elaborate and implement comprehensive government regulation on eco-design and RoHS compliance focusing on rapid implementation.
- Develop an effective information and communications process with internet and intranet support systems.
- Train companies on establishing and implementing management systems that focus on compliance requirements and involve all decision makers and stakeholders.
- Initiate highly specialist training modules in eco-design for industrial designers in companies, together with institutes like ELCINA, NID (National Institute of Design), and the Indian Institutes of Technology. It would also be important to learn from international experience since most of the process technologies currently used in India are imported from the EU, Japan and the US.
- Initiate research on cost structures of cleaner processes to suggest methods for bringing down compliance costs, particularly for the SMEs.

The *medium to longer term* measures will need to focus on:

- Upgrading skill levels and the knowledge base.
- Institutionalising systems and competencies at the national level.
- Establishing partnerships with companies like Siemens, Tyco, AT&S, Sony, Philips, Nokia, Soletron, Jabil and Flextronics who are positioned at various stages of the supply chain.

The Government will have a key role to play in *long term* capacity building. In particular, it needs to:

- Devise support systems including infrastructure development to bring down compliance costs.
- Track global compliance requirements on an ongoing basis and develop appropriate policy agenda and implementation programmes.
- Support design, testing, tooling and training, targeting as many SMEs as possible. This could be done jointly with the industry, training institutions, academia and other enabling agencies.

For more information, see www.cfsd.org.uk/aede.

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