

Making Integrated Product Policy Work on the Global Scale: the Example of Electronics

## More Greening, less Trashing

**Die Umweltwirkungen der Globalisierung werden kontrovers diskutiert. Im Sinne einer eher optimistischen Sichtweise verfolgt die Europäische Union die Strategie einer globalen Ökologisierung der Wertschöpfungsketten. Das Stichwort lautet Integrierte Produktpolitik. Doch inwieweit sind Hersteller aus Entwicklungsländern in der Lage, hier mitzuhalten? Dies wird anhand des Beispiels der Elektronikindustrie diskutiert.**

**T**he environmental effects of globalisation are controversial. Multinational companies are suspected to make deliberate use of developing countries as *pollution havens* within their global production networks. Developing countries charge the North of „environmental protectionism“. In a more optimistic view, intensified North/South trade relationships and closer interaction along supply chains are expected to leverage green consumer and legislative pressure from the North, and eventually increase the transfer of environmental friendly technologies to the South. Within the European Union, the *greening supply chains* philosophy has prompted proactive policies. The EU directives on End of Life Vehicles and Waste Electrical and Electronic Equipment (WEEE) paved the way to *Integrated Product Policy* (IPP) as an overall European policy guideline. In Europe, closer and new forms of co-operation along the supply-chains are the natural consequences of the IPP paradigm. But are suppliers from the developing world prepared to play an active role in this new game? How could the IPP of the EU leverage environmental benefits on a global scale?

The electronics industry is a typical example of the tightening world wide networks of production, consumption, recycling and disposal. Since the mid-eighties, electronics has been one of the fastest growing sectors, with the electronic *components* industry as an even faster growing sub-sector. Transistors and semiconductors; computers; parts of computers and office machines; and optical instruments have become the four most dynamic product classes in world trade, with the share of total exports from developing countries rising 25fold for computers and 12fold for computer parts since the early 1980s. Today, nearly a third of world exports in high-tech goods comes from developing countries (1).

Von Peter Löwe

A large share of global high-tech trading occurs within the expanding production networks of transnational corporations. But since goods in such networks travel across several locations before reaching final consumers, the total value of recorded trade exceeds the value added by far. Moreover, the share of many developing countries in the total value added is determined by the cost of unskilled labour, the least scarce resource and weakest factor. This keeps their income down despite their rapidly expanding share in world trade.

### ► Dislocated Environmental Impact

In addition, the slicing of production and assembly processes by TNCs and the dislocation of certain steps to developing countries may have detrimental environmental effects. The case of India is instructive here. Strongly involved in international production networks, the Indian electronics industry is composed of a few larger companies, some 12.000 SMEs with an average size of 15 to 40 employees, and an unaccounted large number of petty and household enterprises in the informal sector. While the industry has for a long time benefited from protected market conditions, the recent dismantling of tariff barriers has seen the sector facing increasing competition and tighter profit margins, a trend that prompted the larger firms to close down plants and subcontract certain production steps to SMEs. This outsourcing process has done little to improve the overall environmental performance of the industry. On the contrary, it is likely that the shift of environmental responsibility to SMEs and further down the chain to household and petty enterprises, has led to more dispersion and less control of the environmental load.

Since the majority of SMEs supply large domestic or multinational companies, their exposure to the international market and their awareness of exi-

sting and forthcoming regulations on international markets is low. The same is true for the commitment of SMEs in environmental stewardship. In 2000, a survey found that the adoption of ISO 14000 and other environmental management systems was relatively high among the larger companies surveyed (5 out of 6), while the share of SMEs was only very low (one out of 15) (2).

### ► Global Waste Trade and Global Environmental Democracy

The *end-of-life problem* of electronic equipment is another source of potential environmental hazard in the global electronics industry. Industrial countries increase the pressure of new environmental legislation, such as the above-mentioned EU WEEE directive, which, if not properly applied, may contribute to increasing the world wide trade of electronic waste. In a 1999 report on the recycling of computer monitors the US National Safety Council estimated that 723.000 worn out monitors had been recycled and 100.000 officially exported. However, as much as 1 million of them remained unaccounted for, and many of these may have gone to parts brokers who exported the stock (3).

Therefore, the global high-tech trade could mask a considerable amount of unaccounted electronic waste, and environmental NGOs are increasingly concerned with „techno-trashing“ of developing countries. The Guangdong province north east of Hong Kong for example has become widely quoted in this respect. In this region, a workforce of about 100.000 people, many of them of minor age, are engaged in recycling electronic waste, with the process being broken down into small, specialised cottage working groups. As a result of poor recycling technologies, the region has been reported to suffer from severe environmental hazard (4).

Reports such as the above result from the increased global collaboration among environmental NGOs with organisations from the North offering technical expertise and those from the South investigating facts that otherwise would possibly remain unknown to the larger public, including to consumers of electronic products in the North. This globalisation of „environmental democracy“ is one of the preconditions to make innovation-friendly self-regulation concepts work on a global scale. In consumer electronics, as in other consumer markets, consumer awareness is the critical driver of greening.

But more environmental awareness in developing countries as well as the emergence of international environmental standards leads also to action

at the national level. Governments are urged to put appropriate framework conditions in place and industry starts looking for cleaner production technologies. With the support of the UN, the Indian Association of the Printed Circuits Industry (IPCA) for example has launched an environmental management training programme (5).

### ► The North/South Dimension of Integrated Product Policy

Against this background it is worthwhile revisiting the potential effects of Integrated Product Policy (IPP) on suppliers from the South. IPP is founded on the consideration of the cumulated impacts of products throughout their life-cycle, from natural resources, through marketing and use, to their eventual disposal as waste (6). The European Commission's „Green Paper on IPP“, of February 2001, laid down the overarching goals and the mix of instruments:

- Using *price mechanisms* to develop markets for greener products, e.g. through an extension of the producer responsibility concept to new areas and differentiated taxation such as reduced VAT rates on eco-labelled products.
- Stimulate consumer *demand* for greener products through easily accessible, understandable and credible information. The main instruments put forward in the Green Paper to achieve this are various types of eco-labelling.
- Stimulate business leadership in the *supply* of green products. Instruments put forward in this context include thematic R&D networks, product panels comprising key stakeholders, the generation and flow of life cycle information, promotion of eco-design guidelines, and the integration of environmental aspects into standardisation. It appears that „harder“ price and demand side instruments may be more sensitive with regard to international trade, whilst the relatively „softer“ supply side instruments and new tools could be relevant to enhance the transfer of know-how and technologies from Europe to its trade partners in the South. Assuming that the world wide adoption of environmental friendly production technologies is in the common interest of both the North and the South, it is useful to investigate whether the opening of IPP to stakeholders from the South could contribute to enhance the transfer of know-how and technologies from Europe to the South. Several supply-side instruments of IPP appear to be promising in this respect.

**Thematic R&D Networks:** For more than ten years, European research on cleaner management,

design and production technologies has prepared the ground for IPP. Thematic R&D networks aim at closing the loop of electronic products and domestic appliances from product planning to end-of-life technologies. One example is the ECOLIFE network which includes 28 partners from ten EU member states such as large European manufacturers of electronic products, universities and research institutes specialising in industrial design, and companies from the recycling business (many of them young innovative SMEs), as well as industrial and professional associations.

**Life Cycle Inventories:** The European Information and Communications Technology Industry Association (EICTA) is developing, in co-ordination with the US trade association EIA and the Japanese „Green Procurement Initiative“, a common materials declaration format and procedure to exchange environmental data between manufacturers and their suppliers throughout the sector. The EICTA initiative focuses on the composition of components, materials and substances.

**Promotion of eco-design guidelines:** The application of eco-design criteria in the development of new products is becoming a critical capacity of suppliers. Practical guidelines such as ISO 14062.4 on „Integrating environmental aspects into product design and development“ and VDI 2243 specific to electronic appliances already exist. It is expected that future life-cycle inventories will also document „eco-design“ features critical to the recyclability of the substances.

**Environmental auditing:** Assessing the environmental compliance of suppliers is becoming current practice. The association of the German electronics industry for instance offers a check list „environmental management of suppliers“ to its members. However, current ISO and EMAS rules only stipulate that suppliers should engage in environmental auditing; no provisions are made for co-operation and know-how transfer between customers and suppliers.

### ► Opening up IPP Instruments to the South

Policy integration is at the top of the EU policy agenda. IPP reflects these efforts by offering an integrated tool box that serves environmental, innovation and industrial policies. However, in the context of globalisation, development and trade policy might also have to be taken into account. Opening up IPP instruments to stakeholders from the South could contribute to make IPP a truly international policy:

- Open up thematic research networks and future product panels to participants from the South;
- Conduct targeted information campaigns in the South on European environmental regulations;
- launch eco-design training programmes for product and industrial designers from the South;
- encourage European industry to invite observers from the South into supply chain initiatives;
- offer specific „public private partnership“ support (e.g. low interest loans) to European companies helping their suppliers with the introduction of cleaner technologies who want to support suppliers with introducing cleaner technologies;
- support environmental NGOs in the South as indispensable partners in global information networks;
- invite governments from the South to participate in the exchange of good policy practices (e.g. „green procurement“; recycling models; etc).

The debate on the IPP Green Paper raised the awareness that WTO rules might give Europe's trade partners increased influence on IPP implementation. It is in the common interest of Europe and its trade partners from the South that the latter gradually become involved in the design and implementation of European environmental policies.

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- (5) <http://www.ipcaindia.org/ipca/html/Environment.htm>
- (6) On the concept and state of the art of Integrated Product Policy see the special issue 6/00 of Ökologisches Wirtschaften.

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