

# The Electrical and Electrical Industry in China



China successfully took over first place in producing electrical and electronic goods – but the fast economic success has left the environment behind.

## Switching Camouflage for Blue Environmental Impact of the Industry Collar

Back in the '80s, this sector was still in its infancy. China introduced economic reforms and an open door policy. At that time, excessive production capacity in the military industrial complex was converted into manufacturing lines for basic home appliances such as TV sets and refrigerators. Local governments set up one firm after another and soon, with the use of their sales channels and networks, these companies developed from technological backwardness to big players that could rival with foreign-affiliated firms.

In China, the electrical and electronics industry then developed into a major manufacturing branch involving stunning growth rates after the mid-'90s, making a clean sweep to the status of a global leader in the production of refrigerators, air conditioners and TV sets and similar electrical appliances, supported by a rising domestic demand for consumer goods and an overall shift of world production from west to east.

Boosted by WTO accession in 2001 and enhanced economic liberalisation, China was ready to fire its exports on a large scale to overseas markets and enjoyed an average annual market growth of 23%.

In 2006 the US watched China, led by FDI inflow and export-orientation, whiz by and conquer the number one position in the electrical and electronic goods global market. Today, this market, which according to the ZVEI is 10% larger than the entire EU-27 market, is characterised by fierce competition. German exporters scramble for a vanishingly low 1.1% market share. However, as a recent Deutsche Bank Research study argues, the potential for German exporters in this attractive market remains huge, "especially as per capita sales here are still far lower than in Europe or in the Americas", according to Mr. Philipp Ehmer, Senior Economist at the Deutsche Bank.

While the economic benefits of sustained growth have contributed to poverty alleviation and improved living standards in China, it has also raised concerns related to energy use, environmental degradation, workers' and consumers' safety. The energy and resource consumption of the Chinese electrical and electronics sector remains high compared to international best practices. Furthermore unhealthy and unsafe working conditions, including nonessential use of toxic and hazardous substances as well as e-waste from the recycling and disposal of used electronic goods remain major issues for this industry.

Nonetheless the Chinese government has recently taken full hearted actions to cap the waste of natural resources and steer the electric and electronic industry into a green future. A new regulation drafted by the Ministry of Industry and Information Technology (MIIT), which will be effective on 1<sup>st</sup> January 2011, requires producers and importers to pay into a national fund that will subsidise the recycling of discarded electrical and electronic products.

In addition and against the backdrop of aggressive policies such as energy shut-offs and severe taxation targeted at inefficient plants, the central government of China recently reported a 15.61% reduction in energy intensity from 2005 levels. There is also a consumer and industry trend towards energy-saving products and an energy efficient production fuelling the green development of Chinas electrical and electronic sector. Management consultancies point out that the demand for energy efficiency is a billion Euro market. The EE industry, with its raft of diverse products, is likely to snap off a good share of it by providing products such as energy-efficient electric motors.

Consumers will increasingly buy lighting and household appliances that meet energy-saving standards. According to the German Federal Environment Agency this trend would allow Germany to save EUR 4bn annually through

The global electrical and electronic industry is an economic heavyweight with its centre of gravity lying in Asia. Its heterogeneous structure and interdependent segments make it difficult, even for experts like the German Electrical and Electronic Manufacturers' Association and the Federal Statistical Office, to define which individual sectors fall within the definition of this manifold industry.

With increasingly internationalised division of labour, Germany stands out as the major European exporter of electrical and electronic goods. The country focuses on high-profile capital goods, such as switchgear, semiconductors, electric motors as well as on intermediate goods that require sophisticated manufacturing processes and add up for 89% of the total national production in this sector.

In contrast to Europe, the Asian continent, with China stemming almost one third of world production in 2007, dominates the production of electrical and electronic consumer goods, driven by low labour cost and minimum hurdles on the manufacturing processes of such products. However a remarkable two thirds of electrical and electronic products exported by China already classify as capital goods of the segments information technology, communication technology and electronic components and systems, confirming China's desire to push forward to higher-value market segments.



improved standby operation of electrical products.

National and EU policymakers catalyse those industry trends by enacting regulations for products that are sold on the EU market. Framework directives such as the Eco-Design Directive of Energy-using Products and Energy-related Products (EuP/ErP), as well as regulations on chemicals and their safe use (REACH) and the Restriction of the use of certain hazardous substances (RoHS), cause high costs and risks of non-compliance to businesses worldwide.

Chinese small and medium-sized enterprises (SMEs) and other suppliers who do not receive assistance in second and lower tiers of the EE industry are struggling to find reliable information and a management response to this challenge. These SMEs are the backbone of the Chinese manufacturing sector, but due to fierce competition and lack of resources, devote only limited investment to addressing environmental and social issues often perceived as non-core business requirements. The result is unhealthy and unsafe working conditions and a heavier burden to recycle and treat waste on the consumer market.

## European Expertise for China's Green Future

In 2008, the European Commission launched the SWITCH-Asia programme with over 30 projects in 14 countries for an overall budget of EUR 90mn to help interested consumers, businesses, and supporting associations switch to a more "sustainable consumption and production". Under this umbrella, the SWITCH-Asia project "Improving Environmental and Safety Performance in the Electrical & Electronics Industry in China" is implemented by a consortium led by the Delegation of German Industry and Commerce Beijing and consisting of partners such as the China National Institute of Standardisation

(CNIS), China Standard Certification Center (CSC) and the Chinese Institute of Electronics (CIE). Representing the private sector, project associate Deutsche Telekom supports the project by contributing its international experience in sustainable supply chain management.

Within a timeframe of four years, the project training and certification programme will encourage more than 500 Chinese SMEs to improve the eco-efficiency of their products and manufacturing processes, as well as their workplace safety and corporate social responsibility (CSR) through complying with international standards and best practices.

Companies will also be incentivised to integrate advanced management instruments such as carbon footprinting or flow-cost accounting with a view to reducing negative impacts on China's environment caused by the production of electrical and electronic goods.

In turn, European businesses will benefit from strengthened partnerships with more reliable Chinese suppliers. Through project training, this will comply with green supply chain requirements. Furthermore, business opportunities may arise for those companies that can feed the demand of Chinese SMEs for state of the art machinery and clean technology needed to achieve efficiency targets.

In addition to the project benefits for companies, Chinese auditing and certification bodies will also be enabled to improve capacity on standards management, eco-efficiency, Occupational Health and Safety (OHS) and CSR practices.

Currently, regional launch events are implemented in 5 cluster regions of the EE industry in order to promote participation of local SMEs in the project activities and gather support from provincial and municipal authorities. To date, more than 500 SMEs received training on sustainable production

and standards. With the recently launched e-learning platform on eco-efficiency, OHS and CSR and the growing involvement of the EE industry large players in China, the project will reach out to the wider pool of SMEs throughout the supply chain.

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