IMPACT of the 
Energy-using Products (EuP) 
Directive on SMEs

In recent years, the European Union (EU) has tightened its environmental regulations on imported products. The Industrialist reports the updates on the Energy-using Products (EuP) Directive and introduces the importance note for SMEs in order to comply with the new requirements.
The Energy-using Products (EuP) Directive was announced in 2005 and came into effect in 2007. It is another important regulation regarding product safety and environmental protection after the Waste Electrical and Electronic Equipment (WEEE) Directive and the Restriction of Hazardous Substances (RoHS) Directive. According to the date from EU, EuPs account for a large proportion of the consumption of natural resources and energy, and over 80 per cent of environmental impacts is determined in the design phase. As such, manufacturers are required to adopt a life-cycle approach (including raw material selection and use; manufacturing; packaging, transport and distribution; installation and maintenance; use; and end-of-life) and take ecodesign requirements into account in the early phase of product development based on the EuP Directive. In this way, the environmental performance of EuPs can be greatly improved.

The EuP Directive covers a wide range of products, which include almost all EuPs in the market except automobiles and large equipment for production use. In 2009, the Energy-related Products (ErP) Directive came effective. The content of the ErP Directive is almost the same as the EuP Directive, except that the product coverage is further broadened, ie from products that directly use energy (eg computers, TVs, washing machines and light bulbs) to products that indirectly affect energy consumption (eg windows, insulation materials and bathroom devices).

Different from WEEE and RoHS, the EuP Directive only provides a legal framework without setting specific requirements for individual products. However, since 2009, “implementing measures” (IMs) accompanying the EuP Directive started to emerge and impose compulsory requirements on specific types of products (as of January 2011, a total of 38 IMs were in force or under study)\(^1\). Manufacturers should pay attention to avoid breaking these new regulations.

**Summary of the EuP Directive**

Two kinds of ecodesign requirements, “generic” and “specific”, are outlined in the EuP Directive. “Generic” requirements refer to the life-cycle assessment of EuPs in terms of product parameters by considering different environmental aspects\(^2\). The results from the assessment would be useful for conducting conformity assessment (see below). “Specific” requirements take the form of measurable requirements in a specific environmental aspect (such as limitation of energy consumption). Any EuP manufacturers should fulfill these two requirements, and further “specific” requirements for each type of products are defined in IMs (if applicable).

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2 Parameters used for evaluating the potential for improving the environmental aspects include: (a) weight and volume; (b) use of materials issued from recycling activities; (c) consumption of energy, water and other resources; (d) regulations; (e) consumables needed for proper use and maintenance; (f) ease for reuse and recycling; (g) incorporation of used components, etc (13 in total). Environmental aspects assessed include: (a) predicted consumption of materials, energy and other resources; (b) anticipated emissions to air, water or soil; (c) anticipated pollution through physical effects such as noise, vibration, radiation, electromagnetic fields; (d) expected generation of waste material; (e) possibilities for reuse, recycling and recovery of materials and/or of energy, taking into account Directive 2002/96/EC (WEEE Directive). For details, please browse Annex I of the ErP Directive: [http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:285:0010:0035:en:PDF](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:285:0010:0035:en:PDF)
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Manufacturers should assess the life-cycle of their products and prepare ecological profiles (depending on the requirement of specific IMs) that list the environmentally relevant product characteristics taken into account in a quantitative manner. If necessary, manufacturers should re-design and improve their products with reference to the “generic” and “specific” requirements.

When conducting conformity assessment, manufacturers can choose between “internal design control” and “management system”. According to Prof Kun-mo Lee, an ecodesign expert from Ajou University, South Korea, “internal design control” for products is almost the only choice, as working on or improving product design is much easier than changing the environmental management system for SMEs.

In fact, there are two levels of requirements for products that need to achieve under IMs. The first level is the “minimum requirements” that the products need to attain. The second level is the “advanced benchmarks” that indicate the best performance of the product in the same product category available in the EU market with possible future evolution of “minimum requirements”. Some IMs have even outlined a clear schedule for products to achieve some “specific” ecodesign requirements stage by stage.

Last but not least, manufacturers adopting “internal design control” should prepare a Technical Documentation File (TDF) for their products based on the results and requirements of the conformity assessment from IMs. Manufacturers should take all necessary measures in order to ensure the manufacturing process is in compliance with the TDF. Although the form and frequency of testing for such measures are not specified, manufacturers are assumed to provide real information in the TDF. Having prepared the TDF, manufacturers should make a Declaration of Conformity (DoC) in one of the EU official languages, and individual member states may require the DoC to be in their official language(s). After the above processes, manufacturers have to affix the CE marking on their product(s) in order to export their products to the EU market.

Points to Note

(A) The Real Impact

As mentioned, with the endorsement of the ErP Directive in 2009, affected products not only include electrical and electronic equipment, but also include any products that will indirectly affect energy consumption. It states that an EuP may be covered by an IM “if it has a significant impact on

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3 TDF should contain the following information: (1) product specification; (2) results of relevant Environmental Assessment Studies (EAS) reports; (3) eco-profile, if required by IM; (4) elements of environmental design aspect of the product; (5) list of appropriate standards; (6) WEEE compliance report; and (7) energy consumption testing.
the environment coupled with a high volume of sales or trade on the internal market, and with clear potential for improvement without entailing excessive costs”. Enterprises may take these criteria to judge whether their products will be regulated under an IM in the near future. However, it should be noted that compulsory regulation on EuPs is an irreversible trend.

Dr Winco Yung, Associate Professor, Department of Industrial and Systems Engineering of The Hong Kong Polytechnic University cum Manager & Principal Investigator of the Ecodesign and Green Manufacturing Team indicated that even when their products are currently not regulated by any IMs, enterprises still need to conduct life-cycle quantitative assessments and make relevant documentations so that the environmental performance of their products can be improved in the long term under the EuP Directive.

He also pointed out that a product can be governed by more than one IM. If there are conflicts between those IMs, the more stringent requirement shall prevail. Taking a simple set-top box as an example, it is regulated by the IMs of “Standby and off mode electric power consumption of household and office equipment” and “Simple set-top boxes” respectively. Those products should follow the IM for “Simple set-top boxes” as it is a tailor-made regulation for this product category.

(B) Responsibilities of Different Stakeholders
The major stakeholders of the EuP Directive are manufacturers and their authorised representatives. Apart from affixing the CE marking before launching the services / products, the DoC should be compiled and issued by manufacturers, traders and overseas importers / agents to ensure the compliance of their products with relevant IM(s). Manufacturers or their authorised representatives shall keep the relevant documents relating to the conformity assessment and the DoCs at least 10 years after the first production for future inspection by EU. The documents shall be available within 10 days upon receipt of a request by the competent authority of a member state in EU.

Prof Yung reminded that manufacturers who make the product or suppliers who only make the components should provide relevant environmental information. Although traders are not legally responsible for the content of assessment or design improvement for products, their market competitiveness can definitely be enhanced if they can obtain such information with reference to the tightening environmental regulations.

Challenges and Responding Strategies
For local SMEs, the biggest challenge of the EuP Directive is the revolution regarding the production concept. As Dr Daniel Yip, Chairman of Hong Kong Electrical Appliances Manufacturers Association and Management Director of GEW Corporation Ltd said, “The EuP Directive stresses on a life-cycle approach in enhancing the environmental performance of a product, so manufacturers cannot only focus on their products or components. Instead, they should maintain close connections with their stakeholders in the supply chain in order to obtain essential information for the compliance with relevant regulations. As the resources of local SMEs are limited, they may not be able to control and manage the life-cycle of all products and raw materials effectively within a short time. In addition, local SMEs are not familiar to the concepts of ecodesign. I believe it may take time for them to accommodate such challenges from the EuP Directive.”
Dr Yip thought that Hong Kong manufacturers should keep abreast of current supply chain information from their clients and work closer with them regarding product development and information exchange. In fact, many large electrical and electronic enterprises in developed countries (such as Japan and South Korea) have already established a sophisticated database and classification system for components. SMEs engaging in OEM should familiarise themselves with the policies on the merchandising of raw materials / components from their clients so as to consolidate business partnerships without losing orders.

Regarding the additional testing and certification requirements, although most of them can be passed to certified laboratories or testing and certification companies, SMEs should also strengthen the staff training to ensure their employees have basic knowledge on relevant techniques. “For example, the CE marking system has existed for a long time. The EuP Directive merely adds on new compliance requirements without changing, for example, its format and the penalty of not affixing it. As EU member states assume the products with CE marking comply with the regulations, sometimes even clients may not have a whole picture of the latest updates on regulations and whether their products have full compliance. As such, manufacturers should work closely with their clients to secure their mutual interest,” Prof Yung said.

It is worth noting that passing well-known certifications for electronic and electrical equipment such as those issued by the International Electrotechnical Commission (IEC), International Telecommunication Union (ITU) and International Organisation for Standardisation (ISO) does not mean full compliance with the ecodesign requirements set out by the EuP Directive. Manufacturers should cross-check with certified laboratories or testing and certification companies regarding the details. In the long term, Prof Yung thought that SMEs should cooperate with institutions and professionals who are familiar to the EuP Directive and find out the easiest solution and conformity assessment.

SMEs should note the most up-to-date regulatory changes and prepare for future enforcement.
methodologies. Ecodesign tool boxes offered by relevant institutions are one of the useful methods to re-design and re-develop their products which will make them easier to enter the EU market.

**Future Prospect and Support**

To conclude, with the endorsement of the EuP Directive and more IMs, enterprises should have a detailed study and analysis on their products in order to fulfil the “generic” and “specific” ecodesign requirements. Prof Yung added, “Even if a product meets all the requirements now, enterprises should know that their products may only temporarily comply with the regulations and thus they should prepare for more stringent ones in the future.”

**Hong Kong manufacturers should ensure their compliance with EU regulations as they will probably encounter similar ones in China in the near future.**

For Hong Kong manufacturers, as comprehensive environmental regulations do not exist in the places of origin of some raw materials (especially developing economies), it may be difficult for them to obtain part of the essential environmental information. However, one can observe from the case of WEEE that when laws and regulations come into effect in the developed markets, the operation of the global supply chain will be affected and other markets will follow suit either based on the reference from developed countries or the real market needs. As Dr Yip pointed out, “Hong Kong manufacturers should ensure their compliance with EU regulations as they will probably encounter similar ones in China in the near future.”

He also asserted that the Hong Kong manufacturing sector has a limited role to play in the legislation processes of the WEEE, RoHS, EuP (ErP) Directive and IMs, although they can proactively respond to the new requirements. As such, SMEs should obtain more information and reflect their opinions to trade associations and industry support organisations. In the long term, the manufacturing sector should fight for a place and engage in the EU legislative processes through authorised channels such as the consultation forum of the IMs.

The Hong Kong Polytechnic University organised a sharing session on “Ecodesign Requirements for Electrical and Electronic Products and the Impacts of EU Directives on Energy-using Products (EuPs) for SMEs” at the FHKI Head Office on 22 February to introduce the EuP Directive to our members. The Hong Kong Polytechnic University established the Ecodesign and Green Manufacturing Team in 2005 to help local industries making the lowest environmental impact throughout product life-cycle and to provide information on green manufacturing and ecodesign to local industries. In November 2010, the Team launched a study project entitled “Development of an Ecodesign Tool Box and the Conformity Assessment Methodologies for the CE Marking Requirement of the Energy-using Products (EuPs) Export to EU Market”, which is supported by the SME Development Fund of the Trade and Industry Department, HKSAR Government. It offers essential assistance to SMEs regarding requirements of the EuP Directive. For details, please browse www.pctech.ise.polyu.edu.hk/ecodesign.