

Delivering advantage

Dr Aidan Turnbull, head of eco-design design at Environ UK looks at the impact of the Waste Electrical and Electronic Equipment Directive on business-to-business producers

The *WEEE Directive* will have a significant impact on the UK electrical and electronics industry. It includes a requirement for the government to encourage eco-design to facilitate dismantling for recovery and recycling of components and materials. But very few companies have applied eco-design to reduce their WEEE compliance costs and demonstrate their commitment to corporate social responsibility.

Up to 100,000 businesses in the UK (25,000 producers and 75,000 retailers) will be affected by the directive. Industry data shows that around 60% of these companies sell electrical and electronic equipment to businesses. In its recent consultation papers, the DTI has focused considerable attention on arrangements for household WEEE. But compliance for producers who sell to businesses is different from producers who sell to private consumers.

B2C producers will have to finance collection, recycling and recovery of household WEEE deposited at local collection facilities. A proposed national clearing house will allocate collections of mixed WEEE to producers. They will also need to choose which compliance scheme offers the most

competitive service to collect and recycle their allocations. This decision can be left until fairly late in the day and will be a cost that producers will have to pay.

The DTI has confirmed that B2B sales must also be covered by contractual arrangements for collection, recovery and recycling. However, there is little guidance available for B2B producers on the practical compliance approaches, and key decisions on treatment requirements have yet to be finalised. Proponents of the clearing house scheme have stated that their regime would not accept B2B WEEE.

Article 9 of the directive allows B2B producers to pass on their legal responsibilities to the customer through appropriate contractual arrangements. In this case the customer is responsible for sending the WEEE to an approved treatment facility, arranging for the target levels of recovery and recycling to be met, and reporting compliance data to the Environment Agency.

The Agency has confirmed that some electronic equipment will be classed as hazardous under the *Hazardous Waste Regulations*, due to be implemented this year. This raises the prospect of B2B customers who do accept these contractual arrangements being required to register as hazardous waste producers with the Agency. In practice, very few B2B producers are planning to pass the full costs of WEEE compliance onto their customers in this way.

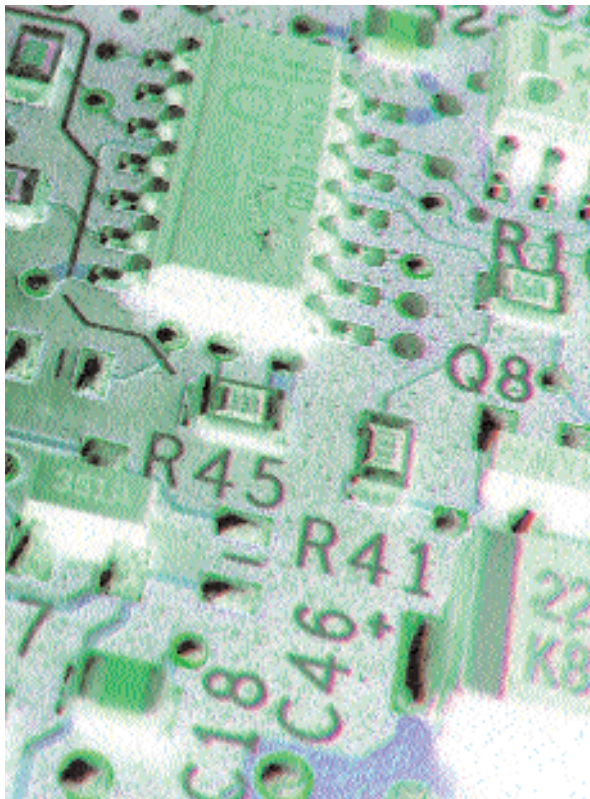
Key business decisions

The biggest difference between B2B and B2C WEEE compliance is in collection arrangements. Business customers purchase goods by phone or internet rather than visiting a retailer, and B2B WEEE cannot be disposed of alongside household WEEE at local authority sites. B2B producers need to consider arrangements to transport products from customers' premises to recycling companies.

B2B WEEE is left very open-ended in the directive. It is up to businesses to decide how they will arrange collection and meet recycling targets, how much cost they will pass back to the customer and how and when they will do this (at point of sale, at end of life, through distributors, etc). There is also the option for B2B producers to pass the legal obligation for compliance to customers through contractual arrangements.

Producers can arrange transport directly to a recycler who can apply tailored recycling approaches to large numbers of separately collected products. This enables the producer to gain financial benefits from any design improvements introduced to make products easier to recover and recycle.

In view of this, it is essential to get an early indication of



collection and recycling costs so producers can:

- ◆ establish appropriate pricing policies with customers;
- ◆ select optimum logistics and recycling arrangements;
- ◆ select an appropriate B2B compliance scheme to manage recycling contracts, data collection and reporting; and
- ◆ consider eco-design opportunities to reduce end-of-life recycling costs and gain market advantage.

It is also important to note that due to the wide range of B2B products, there are many ambiguities over whether certain B2B products fall into the ten WEEE and RoHS product categories. Member States have indicated that they will refer decisions to the law courts. It is imperative for companies to take early advice on the categorisation of products to ensure they understand their exposure.

Reducing costs

The starting point is to understand what causes the customer to discard a product and what then happens to it. Companies can then identify the best end-of-life option and make design changes to optimise this approach. There is a wide variety of design changes that can be made, depending on the choice of end-of-life option. Options that avoid the product becoming waste in the first place will generate the greatest economic and environmental benefits.

New product designs at ABB

Despite the potential cost benefits and marketing advantages, relatively few B2B producers have applied eco-design to reduce WEEE compliance costs. One company that has taken this approach is ABB. ABB is a leader in power and automation technologies. The group operates in around 100 countries and employs 120,000 people.

ABB already operates a scheme to remove and recycle up to 90% by weight of variable speed drives when supplying new equipment. With assistance from Environ, ABB turned its attention to eco-design to minimise WEEE compliance costs for its range of instrumentation products, a number of which fall into product category nine of the *WEEE Directive*.

Following an initial seminar to raise awareness, ABB set up a project team to build internal expertise and apply the lessons learned to other product ranges. The project required input from a wide range of business functions, including design and development, sales and marketing, quality, management, accounts, production and purchasing.

After clarifying which products are affected by the *WEEE Directive* and what currently happens to them at end-of-life, the team assessed the costs and benefits of different options for collection and recycling based on current product designs.

Working with specialist recyclers, Environ identified a number of design changes which will significantly reduce the costs of recycling. These changes will not increase manufacturing costs and may even result in cost savings.

ABB has adopted the design changes and is developing two product ranges which will go into production early this year, in time for the directive. This will minimise the costs of compliance and enable ABB to maintain its competitive advantage while also meeting its corporate social responsibility commitments.

Eco-design at Smiths Group

Eco-design addresses the fundamental environmental impacts that a manufacturer has on society – the lifecycle impacts of the products it sells to customers. It requires companies to take an objective look at how they can reduce environmental impacts and cost in materials selection, manufacture, packaging, use and at end-of-life.

More eco-design directives from the EC are due to be implemented, and taking an early lead in eco-design enables a company to get ahead of forthcoming global regulatory pressures and position itself as one which really cares about its environmental responsibilities.

Smiths Group's environmental policy includes a commitment to "ensure that environmental issues are considered in the design of products and the introduction of processes, services or facilities in order to minimise adverse impacts and improve environmental performance". As part of the ISO 14001 certification process, Smiths businesses are required to provide evidence to support this commitment.

Preparation of the group's 2003 EHS report involved consultation with Smiths' top 15 customers and seven key investors. These investors now look beyond ISO 14001 and are focusing attention on issues such as supply chain management and product stewardship – in particular hazardous substances and product life cycle impacts.

Several commercial customers have already asked Smiths' companies to meet RoHS and WEEE-type requirements, even though in some cases the products fall outside the scope of the relevant directives.

Eco-design demonstrator project

To respond to these drivers, Smiths commissioned Environ to design, develop and deliver a pilot project to demonstrate the business benefits of eco-design to other companies in the group. Environ decided to bring in innovation management skills from Giraffe Innovation and materials expertise from Splendid Engineering. Four Smiths businesses participated in the first eco-design demonstrator project, in 2004. A club approach was adopted, based around three structured one-day workshops comprising a mix of product disassembly sessions (with participants taking turns to work on each others products); eco-design theory and case studies; group exercises; and regular feedback presentations from the participants to share the lessons learned.

Skills learnt during the workshops were translated into action through visits by the consultants. The experience gained was incorporated into a formal eco-design guide for wider dissemination across Smiths.

The eco-design demonstrator projects have led to cost savings, improved functionality and reduced environmental impacts. A range of initiatives was identified and explored. Smiths Group has also found that being able to demonstrate how environmental thinking has been integrated into new product development has been key to securing multi-million low interest loans for research and development projects. ■

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