



# Clean bill of health?

**W**hilst environmental legislation like the RoHS Directive is designed to promote a greener world, the impact can have both positive and negative effects on the industry. RoHS – the Restriction of Hazardous Substances Directive – has polarised opinion and, in some areas, is seen as more eco harmful than eco friendly.

But it's the financial burden of complying with the Directive that has hit manufacturers the hardest. Lead free solders have higher melting points and therefore need elevated process temperatures during the production process. This in turn requires more power consumption, which has meant an increase in operating costs and a negative effect on companies trying to make their entire operations more eco friendly.

In 2005, the DTI (now DBERR) concluded the financial impact of complying with the RoHS Directive on UK manufacturing would be between 1% and 2% of turnover. Did anyone in the industry try to challenge the figures which the Government used?

Very often, these Directives have far reaching consequences and some dissenting voices have challenged the Directive's perceived wisdom. Some have even gone as far as to say that RoHS is effectively a trade embargo!

So, how can the industry help designers and manufacturers to comply with the RoHS Directive when their power consumption has increased and energy bills are going through the roof?

*How companies investing in 'clean' designs can offset the costs incurred by complying with the RoHS Directive.*

*By Mike Richardson.*



"RoHS will have a negative effect on all producers due to the energy demands of the alternative solders and the price differential of new solders," explained Giraffe Innovation's Mark Dowling. "This will impact not just UK manufacturers, but those in Europe and companies supplying EEE into Europe from the Far East, Eastern Europe and even the USA. There are also restrictions in place in China and Korea, so the UK is not alone."

## **The throwaway society**

SMART Group technical committee member, Nigel Burt points to the lack of comparative lifecycle assessments available when the RoHS Directive was originally drafted, which made it

argued, the ban on lead in solder has many negative environmental impacts, unlike the elimination of some of the other substances. Yes, more energy is being consumed at a time when energy prices are increasing significantly. Yes, higher impact mining is needed to extract the alternate metals required with more energy being used again. Yes, silver and copper possibly leach into the water system faster than lead."

Burt points to another DTI report in 2004, which said '... though it is extremely difficult to quantify the benefits that may result from restricting lead in new electrical and electronic equipment (EEE) products, it is likely that given current exposure rates in the UK, the potential benefits from the RoHS Directive may be somewhat limited'.

"However," claimed Burt, "the train started rolling at the EU in 1990 when the issue of waste electrical and electronic equipment (WEEE) was first identified and the industry was too slow to respond."

The RoHS Directive was originally added to the WEEE Directive and, when it was first drafted, much of the industry ignored it, assuming that it would never be accepted. However, industry is at a stage where it is too late to change.

Farnell's RoHS guru and Directives expert Gary Nevison points to the lack of comparative lifecycle assessments available when the RoHS Directive was originally drafted, which made it



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difficult to determine at the time if there would be any real eco benefit.

“If the kinds of research we are seeing now had been available right from the outset, then it would be interesting to speculate whether or not lead would have been restricted as part of RoHS Directive,” he mused. “Now the research is available, will that encourage lead to be deleted from RoHS? This means going back to the politicians and the answer is likely to be no.”

Nevison (pictured right) references a recent Ernst & Young report, which states that regulatory and compliance risk is the greatest strategic challenge facing global business in 2008. This is based on the fact that there are so many Directives and interpretations in so many different countries that keeping up to speed with them all will be a challenge in itself!

“In general, UK manufacturing has adapted to the RoHS Directive fairly well,” he observed. “Some companies have received grants from the Government, whilst others have profited from initiating training courses for the correct uses of lead free solder production techniques.”

According to Giraffe’s Dowling, the government offers advice to companies through agencies like the Manufacturing Advisory Service, Netregs and Envirowise.

“Giraffe helps companies to run as lean and as efficient as possible,” he claimed, “and through our workshops and meetings with companies in 2007, we have saved UK industry in excess of £50million.”

Indeed, a growing community of legislation experts has appeared throughout the industry, with everyone passing on information to help each other – which is how it should be, because it’s a common problem.

problem with RoHS was that there was very little industry engagement and it’s still quite limited, which means the legislators and the people they employ to push forward the process can sometimes operate in an information vacuum. The UK’s small businesses are in a better position to do this because they are now aware that if you don’t engage, then it’s more difficult in the future.”

### Cleaner by design

Although designers are being forced to change their designs – and it is a painful process to go through – if they do it well, they can be in a situation where they are ahead of the competition.

“One of the key drivers in developing more sustainable or ‘cleaner’ designs has been the introduction of environmental legislations, such as RoHS,” commented Envirowise’s cleaner design specialist Luke Cox. “Following a systematic approach to cleaner design can help companies identify more efficient design and production techniques and adapt to major legislations such as RoHS.”

Cox says that companies investing in sustainable design also often identify techniques that give rise to innovations or products that are more cost effective or easier to make. Therefore, by following this approach companies can offset any costs incurred with complying with the RoHS Directive.

“Within UK industry, we expect to see an increasing emphasis on a more holistic view of product lifecycles in the future,” he concluded. “In fact, there is further legislation on the horizon which seeks to improve the environmental performance of energy using products. The EuP Directive may require some manufacturers to identify which part of a product’s lifecycle has the most impact on the environment and then design in efficiency measures. Producers should therefore be considering opportunities to pursue sustainable designs as a priority – and reap the benefits that this approach can bring!” ■

