Report: Meeting the technical and regulatory challenges of global environmental legislation

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ERA Technology, now known as Cobham Technical Services, has been running an annual conference event in the UK concentrating on the effect of environmental regulation on the electronics industry since 1999. The two-day event organised at a hotel near London Heathrow airport held in late November 2009 was thus the tenth of its kind. The continuing demand for such a conference is a measure of the importance and influence of this subject matter. There were 18 presentations delivered on the current status of a variety of regulations originating mainly from the EU, such as REACH, RoHS, EuP and WEEE, but that are now being recognised in legislature elsewhere in world, such as in the USA and China.

In November 2009, I attended, as a representative of both the International Association of Broadcast Manufacturers (IABM) and the SMART Group, an excellent two-day conference event on global environmental regulation organised by Cobham Technical Services, perhaps still better known formerly as ERA Technology.

The conference was opened by Dr. Chris Robertson, one of the organisers, who began by comparing the mostly nascent environmental regulation ten years ago when ERA Technology first ran this event, with the status today. Back then, he said, the WEEE and RoHS Directives were still merely draft proposals, but the industry was already preparing to move over to lead-free solder in anticipation of enforcement and to promote a "green" brand image, the latter being an aspect which is still very important in guiding corporate attitudes to environmental issues.

Where the EU in the 1990's had identified the need to tackle the waste stream created by the disposal of electrical and electronic equipment, Chris reminded us that product energy usage and efforts to tackle climate change were now the focus of much global political thought and it would be foolish to ignore this.

The first presentation was given by Dr. Johan Nouwen, who works for the European Chemicals Agency (ECHA), the body responsible for the administration of the REACH regulation. Explaining the reasons and mechanisms behind REACH and the benefits claimed was something of a thankless task—especially given some of the comments on REACH in other presentations and during questions from delegates—but having someone from ECHA do so was illuminating. The complaint often voiced about the slow start-up by ECHA was partly answered by hearing that the IT systems they had put in place had been totally over-stretched as they had received 20 times more pre-registrations than anticipated. In fact Dr Nouwen's presentation noted that 2.75M pre-registration requests have been received for 143,000 different substances and from 65,000 different companies. This put the huge scale of REACH into stark perspective for me, as this is just the very start of its process.

The second speaker was Dr. Phil Hope of the European Chemical Industry Council (Cefic), whose presentation looked at the interaction between the RoHS Directive and the REACH regulation.

He was the first of many speakers to discuss the on-going work to "recast" the RoHS Directive. "Recasting" is a process in EU legislation allowing defined sections of a regulatory instrument to be amended, retaining the unchanged portions and repealing the old version entirely once the new text is agreed. The European Commission proposed and published recasts of both the RoHS and WEEE Directives in December 2008, and the

This is a summary of Nigel Burtt's report on the Cobham Technical Services 2009 event. The full report can be read at http://www.globalsmt.net/content/view/9224/115/

work since then has involved both the Environment Committee of the European Council and the European Parliament. The final texts need to be agreed as a co-decision process between these two. The original proposed recast Directive text called for no new restrictions, but did identify four substances for priority review and suggested that these and any further additions should be reviewed using the same methodology required by the REACH regulations.

The MEP, Jill Evans, is the person responsible for drafting the proposed final text (the Council's "rapporteur" for RoHS.) She agrees with those arguing that this recast should ensure new electronic equipment is free of all PVC and halogenated flame retardants and claims support for this from many consumer product manufacturers who, in turn, are being lobbied on this matter by public green pressure groups. In fact I discovered in writing this piece that she was speaking at an interesting conference, "Greening Consumer Electronics—from Hazardous Material to Sustainable Solutions" hosted at the European Parliament, the same day as we were meeting in London. Her intentions with regards to this were signalled even more clearly by a draft report she submitted to the Parliament in December 2009.

Dr. Hope offered a summary of the position that Cefic had submitted in terms of both the recast ROHS Directive and the REACH regulation. They, in common with other industry bodies, supported the suggestion that future substance restrictions should be reviewed using procedures specified by the REACH regulation.

Feodora von Franz then spoke, representing TechAmerica Europe, who are also in favour of alignment of RoHS with the procedural elements of REACH when reviewing substances. They have also made very strong representations that the very latest compromise text of the RoHS Directive, current at the time of the conference, where the scope has been expanded to include all EEE unless specifically excluded, was not at all acceptable unless subject to adequate assessment in advance with the involvement of all stakeholders.

The next speaker discussed the Eco-design Directive. Davide Minotti works for the UK government and has direct responsibility for this. An important recent change to EU legislation, he noted, was that the Energy Using Products Directive (EUP) was, as of October 2009, now known as the Energy Related Products (ERP) Directive, having itself been subject also to a recast process.

Some advice on practical steps for compliance with the Eco-design Directive was then given by Paul Ellis, of Kingfisher, a global DIY product retailer, whose presentation was centred on a real-life case study of Kingsfisher's efforts which found that the voluntary phase-out period, prior to the relevant regulations being implemented, though supported by industry and encouraged by government, actually created more problems because they had to work with their supply chain without being able to point to fully defined product performance requirements.

Next to speak to us was Georg Karl, presenting on behalf of COCIR, a medical equipment trade association. He gave a case study example of portable ultrasound equipment where voluntary product changes in progress were already expected to give environmental and financial benefits in advance of and better than the proposed EUP Directive implementing measures.

Another case study presentation, this time concerned with the REACH regulation and its effect of the aerospace manufacturing industry, was given by Terry Palmer of Lockheed-Martin in the UK. He spoke of the special challenges for his industry that REACH presents with products that are required to have a lifetime of at least 25-30 years, fully traceable throughout to safety and airworthiness certification standards. Competing companies had co-operated in order to tackle these difficulties, via ADS in the UK, ASD in Europe and AIA in the USA. Together they had created two standards for the collection and verification of REACH data for the global aerospace industry and such was the seriousness of the business risks anticipated that this took just six months to develop and agree. He informed us that these organisations have produced a regularly updated guidance document for the industry which is free to download from their websites.

In common with others who had already commented after the ECHA presentation, however, Terry's case study showed that only 50% responses were received to initial supplier surveys on REACH. On a more positive note, 51% of those who did respond said they already had a compliance process in place and 44% provided additional helpful comments which aided understanding of the issues.

Terry explained an escalation procedure that could be employed to demonstrate due diligence if your supply chain won't respond in time with the REACH data you need for tracing content of Substances of Very High Concern (SVHC):

1. Start with sub-tier suppliers first, then if they don't respond;
2. Go up the supply chain to the next level, checking you have the correct supplier contact details each time and if possible establish the corporate REACH contact point in advance before submitting the query;
3. If the supply chain queries fail to provide the answers you need, thoroughly check all your own company history records, internal documents, data and resources held on the item;
4. Then check external resources (e.g. similar parts, substances, or suppliers);
5. Finally, consider testing the item in-house or using an external laboratory for the presence of SVHCs.

One option open to the aerospace industry is if the substance or article is necessary for the purpose of a defence application, since the REACH regulation specifically allows Member States to grant an exemption in this case. It is however not mandatory for EU Member States to allow exemptions, nor to recognise an exemption from another Member State—Denmark, for example, had not found it necessary to grant any, thus far. This is a concern in such an industry which often requires international co-operation.

The first speaker on day two of the conference was Iain Nichol, a UK government employee with lead responsibility for UK RoHS policy and part of the team working on the recast Directive. He also has responsibility for BIS policy related to the Eco-design Directive. Iain explained the latest status of negotiations on the RoHS Directive in meetings between the European Parliament and the Council. This recast was needed if only because of commitments in the original Directive to consider bringing product categories 8 and 9 (medical devices, and control and instrumentation equipment) within the scope of the Directive.

These products were expected to be brought within scope without dissent; however the UK were arguing that the implementation dates for this, and other time-limited changes in the text, must alter and move further out, if the negotiations are protracted and delay the publishing date and final approval of the amended Directive.

He gave us details of the "New Legislative Framework" (or NLF) which entered into force on January 1st 2010 and said that the recast RoHS Directive would be expected to adopt the approach and mechanisms laid down by this. The NLF also includes a "toolbox" of measures for conformity assessment, referred to as "Requirements for Accreditation and Market Surveillance" (RAMS.) The implementation of these measures is intended to increase the visibility of non-EU manufacturers and minimise the number of non-compliant products on sale.

Chris Smith of the National Measurement Office (NMO) in the UK spoke next. NMO are the RoHS Directive enforcement body in the UK and would be using the NLF and RAMS. He explained that hand soldering with tin-lead solder remains the most common cause of non-compliance with the RoHS Directive, but NMO also often find evidence of fraudulent declarations or misinterpreted test reports. Chris cited an example of documentary evidence of compliance presented to NMO in the form of a test report that a company had commissioned but clearly never read, because the report clearly stated that the parts tested were non-compliant.

NMO are also the UK body tasked with the enforcement of the Batteries Directive, which came into force in September 2008, and had just been appointed a few weeks beforehand as the body for the EUP/ERP Directive and the Energy Labelling Framework (ELF) Directive.

Brian Spencer of OKI Europe then explained that their three main manufacturing facilities in Asia were able to claim officially that the printers they produce are "manufactured at a Carbon Zero facility" thanks to a validated CO2 emission offsetting project. Brian explained the work that OKI had done to meet and go beyond the requirements of global environmental regulation. The expenditure to meet this had been €2.5M in 2008 and was expected to rise to €3M this year.

Julian Lageard of Intel pointed out that the EUP Directive actually states that in drafting implementing measures any existing industry voluntary agreements or codes of conduct must be considered if they may achieve the Directive's objectives faster or at lesser expense than mandatory requirements. He gave an example of a current voluntary code of conduct being drawn up for IT Data Centres, which Intel were participating in.

Dae Young Park then provided advice concerning Asian regulations, explaining that China was currently issuing the most individual regulations of all countries in the world. However, he explained that this fact was misleading because one EU legal text might equate to 20-40 different Chinese pieces of related legislation to achieve the same ends. He compared the size of the REACH regulation at 278 pages with the current equivalent from China, which was just four pages long and had a much narrower scope.

REACH, he said, was having a major impact on the amount of global chemical management policy being produced. Around 580 different chemical policies and regulations had been introduced in 2008, but again this data had to be qualified by seeing that 42% of these came just from EU Member States having to bring out or amend existing national legislation to comply with REACH. He showed that Japan, Korea, Taiwan and China were, however, producing chemical regulations that would have similar industrial influence to REACH.

Dealing with China's chemical control regulatory system is difficult even for Chinese domestic industry because around nine different government agencies are involved in producing and enforcing the legislation. The same multi-agency problem exists with China's version of RoHS. The recent publication of the first draft of the so-called "China RoHS Catalogue of Products," he said, came from one ministry only and appeared to be just "testing the water," hence the relatively few products listed so far. He was sure that the list will be added to quickly and the number of affected product categories will increase if this first draft is successfully adopted.

Jennifer Wallace, from a global environmental law practice, updated us on the progress of similar legislation in the USA, detailing existing state laws with similar intent to RoHS and noting that such laws were now being proposed at federal level.

Recently, the HR2420 Federal Environmental Design of Electrical Equipment Act (EDEE) has been proposed. This is very akin to the RoHS Directive and aims to create a law which would prevent confusion and disparity between the various different RoHS-like State laws. EDEE is strongly supported the Association of Electrical and Medical Equipment Manufacturers. However, a timely reminder of the behind the scenes negotiations that may affect such regulation was made, in that the current text specifically exempts certain medical equipment, so this body will be keen to have this exemption in place for its members, pre-empting any other law that may come later. Of course, this is happening just as the recast RoHS Directive looks set to bring medical equipment within its scope.

Moving on to WEEE, she said that nearly 40 states have similar legislation enacted already or are in the process of doing so, but that federal law is being introduced too. Federal regulation similar to EUP/ERP was also in progress with one recent addition having some measures very similar to the EU's Eco-design Directive, in relation to external power supplies and battery chargers.

Stéphanie Zangl of the Öko Institut spoke to us about her organisation's reviews of the RoHS exemptions on behalf of the EU. She admitted the granting and review process is very lengthy and bureaucratic. She hoped that the recast Directive would streamline the review, involving industry as early as possible to examine the practical aspects of removing an existing exemption or granting a new one. She also felt it was highly likely that the European Parliament would insist on adding restrictions for halogenated flame retardants and PVC to reduce the amount of this material ending up in the WEEE stream.

Adrian Beard of Clariant looked at various industry projects in progress to allow us to move away from restricted halogenated types. REACH, the RoHS recast and consumer and market demand pressures will, of necessity, drive flame retardant manufacturers to produce newer and better types, he claimed.

Dr Paul Goodman of Cobham Technical Services looked at various substances that were already banned or being considered for bans and what industry could use instead to replace them. One example he gave was Dibutyl phthalate (DBP), a widely used plasticiser. This is restricted in the USA and was on the REACH SVHC candidate list because it is classified as reproductive toxin. Many of the suggested substitutes were also being restricted, but some possibilities did exist, such as Tri-2-ethylhexl trimelliate (TOTM)—still classed as a lower grade reproductive toxin but already approved in the USA for medical product use.

The conference was concluded by Dr. Chris Robertson who thanked all the participants and delegates and said that full conference proceedings would be available for purchase on the Cobham Technical Services website within the next few months.