



The Chartered Institution of Wastes Management

The Chartered Institution of Wastes Management (CIWM) is the professional body which represents around 7,300 waste management professionals, predominantly in the UK but also overseas. The CIWM sets the professional standards for individuals working in the waste management industry and has various grades of membership determined by education, qualification and experience.

Lords Science and Technology Select Committee, Sub-Committee Waste Reduction

EXECUTIVE SUMMARY

The Chartered Institution of Wastes Management (CIWM) welcomes this opportunity to present evidence for an important examination of the practice and future development of waste reduction in the UK. In preparing this evidence the Institution has consulted with experts members from several of its Special Interest Groups, including its Waste and Resources, and Strategy Groups, and their comments have incorporated into this response.

The Committee have posed a series of questions as the basis for this inquiry and these are dealt with in detail below. CIWM would however raise five main points as follows:

Terminology – the use of terms such as “minimisation”, “prevention” and “reduction” of wastes causes confusion. CIWM would prefer concentration on waste reduction in this inquiry, as this implies an active, managed and measurable process using baseline data and on a time and/or product basis. CIWM believes that waste prevention can only begin from a clear understanding of resource use – including energy, water and materials, and wastage. Lack of such understanding is a frequent frustration to waste reduction, leaving minimisation or prevention as poorly defined aspirational targets in many cases with poor reporting of what is actually achieved.

Waste Strategies - This inquiry is timely given the recent (May 2007) launch of the new Waste Strategy for England and work on other UK national waste strategies. CIWM welcomes the broader scope of these strategies which have in the past concentrated on municipal waste and recycling. Whilst both are clearly important, true resource efficiency and environment protection lies in action on waste from all sectors, not just the less than

10% from municipal sources. The English waste strategy contains many proposals to support waste reduction but this relies heavily on further and more detailed work to be done. In turn, this relies on strong co-ordination by Defra between various Government departments and with a broad range of stakeholders – all of whom have a role in delivering the strategy in the real world. CIWM is happy to commit to this work and the sustained co-ordination needed to support it.

Resource Efficiency – waste prevention needs to be viewed within the broader objective of whole life cycle assessment of products and services. Our objective should be to reduce energy, water and materials consumption in all stages of design, manufacture, use and end-of-life management, not just focus on cutting visible waste production at the production or use stages. This requires data, information, tools and skills to do and the practice of LCA needs support if it is to deliver better design or products and processes in future.

Co-ordination – Government already supports resource efficiency and waste reduction through a variety of bodies. Whilst much good work is done through these bodies there is a clear need for co-ordination and targeting of their efforts, especially if changes are to be made at the SME end of the business spectrum. Clear communications of the need for resource efficiency and the business and environmental benefits is vital. Government also must monitor the effectiveness of these measures closely as most initiatives depend on cost saving opportunities for businesses. If these do not bring about improvements needed in resource efficiency more enforceable measures will need to be considered.

Priorities – this inquiry will inevitably and rightly consider high visibility issues such as packaging, carrier bags and disposable nappies. Whilst these are important in their own right and in terms of their effectiveness in supporting more general interest in resource efficiency, there are other activities and waste streams that could have a much greater impact in environmental and business terms including transport and food wastes. Again, CIWM would urge a whole life cycle approach to identifying future priorities for waste reduction / resource efficiency action.

THE SUBMITTED EVIDENCE

Better design and the use of materials

- *What role can better design and materials play in minimising the creation of waste?*
 - *Are there any barriers to how knowledge in this area can best be translated and applied?*
- 1) Better design and materials use can indeed help prevent waste. However, the prime objective in design should be to minimise the whole life cycle cost of products and services. This should take into account all materials and energy used from winning and

provision of raw materials, the product's use and its "end of life" management or disposal. The science of life cycle analysis is still developing and data, tools and skills to use them will be needed if we are to make justifiable decisions on which designs are most sustainable, rather than producing "least visible waste" designs.

- 2) Any public examination of waste prevention will inevitably focus on products highly visible to the public – including plastic carrier bags, disposable nappies and packaging. However, in the pursuit of resource efficiency and least environmental cost, rigorous analysis and concentration on more important issues such as food waste (around 20% by weight of household waste) is needed.
- 3) Packaging and packaging waste reduction remains important, however, in view of the materials and energy used and because of the clear public interest. Changing public attitudes and behaviours in issues such as packaging can lead to altered awareness and performance in other areas with potentially even greater environmental impact such as transport for example. It is still important, however, to consider packaging from a full environmental cost perspective. Packaging helps to reduce wastage of the goods contained especially for delicate goods (including electronics) or for foods which - when correctly packaged - suffer fewer transport and handling losses and have longer shelf / kitchen life. These savings have considerable energy and materials benefits "upstream" in the production process. Optimising packaging involves striking the right balance between product and health protection and the materials and energy used.
- 4) Much work has already been done in reducing packaging materials use, the weight of a glass milk bottle has fallen from over 500 g to less than 250g. Two case studies on PET light-weighting were reported in August 2007, where 500ml bottles were reduced from 26g to 24g, without compromising the brand shape of the bottle. There are, however, limits to light-weighting packaging, especially if it no longer adequately protects the contents or if it undermines re-use which does have an important role in minimising the creation of waste.
- 5) Promoting design for reuse, re-manufacturing and recycling has been encouraged for many years and there are more examples in consumer electronic goods and vehicles where parts and materials are being recovered and reused.
- 6) EU and UK legislation already exists to reduce the creation of hazardous wastes, in connection with waste electrical and electronic equipment (Restriction of Hazardous Substances - RoHS) and more widely through the Registration, Evaluation, Authorisation and Restriction of Chemicals - REACH). Other materials substitutions are also possible – eg using cardboard to reduce the need for polystyrene. This helps simplify the wastes and supports high quality secondary material recycling – but may have complex impacts in terms of the energy costs of transport for example. Careful assessment of whole life cycle costs is needed in such cases.

7) CIWM would support continued but better coordinated integration between the various product and Resource Knowledge Transfer Networks which should be encouraged to facilitate knowledge transfer between different industry sectors. Better interaction is needed between those responsible for design, manufacture and supply of products and the waste and resources management sector – both in terms of better design for end of life and to ensure this industry supplies secondary materials back into the market of the right quality.

- *What factors influence the use of materials? In what way do considerations of sustainability feature in the selection of most commonly used materials?*

8) CIWM believes the primary driver is cost for most products. Other measures are needed to drive manufacturers and designers to increase their use of secondary materials. Our sector is focussed on reprocessing waste materials to a standard where it can be placed on to the market – where there is confidence to buy and use. Manufacturers need to be confident that it is good clean quality material going to market; this can be underpinned by recycled content drivers. An example of a positive one is recycled content of newsprint paper.

9) Primarily cost, other considerations are product design (including regulations concerning food containment), design criteria (look, durability, strength), client requirement and storage criteria (vapour barriers, temperature).

10) Moving away from virgin materials will depend upon recovered materials meeting product standards, quality and cost. This is difficult to maintain in a mixed and variable commodity world where prices are volatile.

- *To what extent do product designers and engineers take into account the availability and the end of life impacts of raw materials?*

11) There is a historic tendency to focus on raw material specifications when selecting resources, and there is a need for engineers, in particular, to be guided towards fit-for-purpose product specifications as an alternative approach. The long term strategy should be to ensure that life cycle analysis of materials used is included in design and engineering.

12) Although there are one or two good examples of designing for end-of-life CIWM believes that awareness and understanding of materials and end-of-life impacts is generally low.

- *What impact does the development of new materials have on design? How much interaction is there between material scientists and designers?*

13) New materials do have an influence on design and designers and materials scientists will interact, however, CIWM believes that there is not enough interaction with the

resource and waste management industry. eg. biodegradable/degradable plastics are a new material being used by designers and engineers without full consideration of the potential impact on the quality of composts through cross contamination by the different types of plastic.

- 14) Research and Design on new materials needs to feed through to scientists and designers.
 - *Can better designed products offset the increase in consumption?*
- 15) In part, this is constrained by unfettered consumer behaviour. Consumers will be influenced by fashion and new designs, and will not necessarily purchase items which last longer, reducing consumption. Much consumption, it could be argued, is driven by the need to replace items that have built in obsolescence. The greater availability of higher levels of disposable income in the UK exacerbates this tendency.
- 16) The paradigm of reducing packaging and long lasting products may in fact not be the best solution. Re-use schemes for e.g. bottles and plastic containers cannot be implemented if the bottles are too fragile, also longer lasting white goods may in fact have more harmful environmental impacts in the use of energy than replacements. Manufacturers are now seriously considering the leasing of items like cars and white goods so that consumers can have the best environmental product and that producers exercise their responsibility by getting the materials back for recycling and also component parts for re-use.
- 17) Another issue is whether increased consumerism is being promoted by marketing campaigns based on environmental and/or ethical issues, especially where such products replace those already owned by consumers.
- 18) CIWM is not aware of any research but it would seem reasonable to assume that individuals who purchase environmentally and/or socially more responsible products are less likely so simply dispose of products they already own by dumping them. They are more likely to try and ensure their re-use – whether on E-bay, at car boot sales, through Freecycle networks etc – or leave in garages or lofts.
 - *Are there any other gaps in knowledge and how are they being addressed?*
- 19) The Environment Agency and Defra are currently working on a series of Quality Protocols, to determine when wastes cease to be wastes and become acceptable as secondary raw materials, based on fit-for-purpose product specifications. The first Quality Protocol, for compost, was published in March 2007.
- 20) This has led to the waste and resource management industry approaching the manufacturing industries to ask them to consider whether the materials they discard can be reprocessed into secondary materials and at what quality.

Business framework

- *Does the current policy, regulatory and legal framework support and incentivise the development of better, more sustainable products and processes? How is the framework communicated to businesses and what is the level of awareness and understanding among businesses?*
 - *How central is sustainable design to business thinking? What initiatives are in place to encourage this and are they meeting business needs?*
- 21) There is growing evidence of businesses reducing materials and energy use / wastage as a part of their corporate social responsibility, for example in the construction and retail sectors. Supply chain pressure exerted through these “early movers” will be an increasingly important driver for resource efficiency. However, for most businesses, waste prevention is still driven through opportunities to reduce costs or to comply with legislation.
- 22) An example of a purely voluntary arrangement is the Courtauld Commitment by large retailers focused on packaging. This could be a powerful way to make change and to influence buyer behaviour, but previous voluntary arrangements in other areas eg farm plastics have not been effective. Time available to make important changes in materials management is short and Government must monitor the effectiveness of voluntary arrangements closely and be prepared to replace them with enforceable alternatives if necessary. Arrangements such as the Courtauld Commitment will not be appropriate for smaller businesses unless it is heavily adapted and supported for their needs. Another example of voluntary practise is the objective in parts of the construction sector to drive for zero waste to landfill much earlier (2010) than proposed in the draft sustainable construction strategy (2020). Such a commitment will need to be supported by better materials separation, management and reporting services through waste and resource managers.
- 23) The mandatory introduction of Site Waste Management Plans in 2008 for most construction sites (suggested project threshold £250,000) is an innovative approach that CIWM believes will lead to waste prevention. This could be applied to other industry sectors through mandatory reporting on environmental performance by businesses, including wastes and energy / resources use.
- 24) Rapid development of waste legislation – mostly led by the EU – has improved standards and driven the cost of responsible wastes and resources management upwards in the UK. Examples include the Landfill Directive, changes to hazardous waste management and the Landfill Tax. Higher costs and business responsibilities for waste help drive waste prevention as businesses strive to ensure compliance and to control costs – especially where previously the low cost of waste disposal has discouraged concentration on waste as an important business issue.

- 25) Business awareness of policy and legislation relating to waste is often still low however. Awareness of specific producer responsibility legislation is better understood by obligated businesses, but more general responsibilities such as the waste Duty of Care are poorly understood. Government must ensure that strategies and legislation for waste and resources are backed by clear and sustained communications programmes – one of the benefits being support for better waste prevention. The Environment Agency’s NetRegs web-based tool helps provide authoritative legislation and policy information to businesses, but this depends on the businesses themselves to recognising they need the information. More active measures are needed to communicate with businesses.
- 26) Businesses often rely on their waste service provider to help them to be compliant. This is an important area for added value service by the waste sector, and will become more so as waste legislation becomes more complex and onerous in future. CIWM believes that waste managers should increasingly be in a position to advise customers on waste compliance and on the types and quantities of wastes that businesses produce in the future.
- 27) Formal Producer Responsibilities have been introduced for a series of product types: vehicles, packaging, electronics and batteries. Their focus is on end-of-life recycling and recovery, but businesses’ obligations to meet these responsibilities are a force behind product design to reduce material use and improve recyclability. In packaging, setting targets for recycling recovery have led to increased tonnages being collected. The parallel Essential Requirements legislation (1998 as amended in 2003) focusing on design has been less rigorously enforced and there have been few examples of prosecution for offences.
- 28) Government supports waste prevention and better design initiatives for businesses through the Business Resource Efficiency and Waste (“BREW”) programme. This programme distributes Landfill Tax – derived funds to a range of delivery bodies including:
- WRAP – the waste and resources action programme
 - NISP - the National Industrial Symbiosis Programme
 - RDAs
 - Envirowise
 - The Environment Agency
- 29) These programmes promote resource efficiency in process or product design through cost savings for businesses. Although there is a recognised need to help SMEs to benefit from these opportunities, they remain the hardest “targets” to reach. It is right that landfill tax paid by businesses is used to help those businesses to be more competitive and more resource efficient in the process. CIWM wishes to see

Government maintain their commitment to this programme and not reduce its funding after the current year. More targeting of BREW resources through delivery bodies is needed to reach smaller organisations rather than larger ones who are aware of the need for and advantages of waste prevention and better design. Much simpler communication is also needed to guide businesses to sources of information and support. The number of initiatives driven locally regionally and nationally can overlap and confuse businesses. There is considerable scope for better co-ordination and communication between business support bodies working in this area – BREW funded or otherwise. CIWM would like to see one BREW funded body take the lead in this area.

- *What other measures can promote a focus on waste reduction among businesses?*

30) Prompting 'extended' producer responsibility to cover business practice and that of its supply chain companies.

31) Promote the concept for businesses to consider their product at the end of its life in order to understand its impact from design to disposal. Therefore encouraging whole life cycle analyses.

- *What lessons can business learn from international experience?*

CIWM declines to comment.

Government policy

- *What is and should be the role of Government in addressing the issue of waste reduction?*

32) Promoting the issue of waste reduction in its own estate, and that of public organisations in general. This should also cover procurement, in terms of products containing recyclable materials. SEPA has gone further in this respect by specifying minimum percentages for aggregates and paper.

33) CIWM believes it is the Government's job to reallocate landfill tax monies via initiatives like BREW to support better use of resources and business performance. However, CIWM does not want to see a reduction in the proportion of tax being paid, being used in this way.

34) CIWM believes that the Government should continue to support initiatives like NISP to stimulate the secondary materials markets, protocol and standards.

35) Specific Government policies could include:-

- Promote the role of waste reduction as part of Corporate Social Responsibility (introducing mandatory reporting guidelines if voluntary measures are unsuccessful)
- Restriction of certain materials to allow the simplification of reprocessing at the end-of-life.
- Consider specific bans on the manufacture of short-life products (e.g. the decision to promote long-life/low-energy light bulbs and phase out traditional light bulbs)
- Explores taxes (and/or bans) on selected items including virgin raw materials
- Regulation over unsolicited mail
- Early confirmation that the new landfill tax escalator of £8 per tonne with effect from April 2008 will continue beyond 2010/11
- Consideration if the landfill tax on inert is too low
- Further bans on landfilling certain wastes from all sectors and not just municipal solid wastes
- Proactive communication strategies across all sectors
- Economic incentives to generate and use energy from renewable sources including the recovery of energy from residual wastes.

- *How does Government policy link up with European strategies and action plans?*

CIWM declines to comment.

- *What lessons can be learnt from other countries - within the EU and globally?*

36) CIWM believes other EU member states are much further advanced in waste management infrastructure to recover valuable materials and energy from their wastes. As early input to Defra's waste strategy review and development CIWM commissioned a report to examine the reasons for these differences¹.

Consumer behaviour

- *How can better product design be used to effect a change in consumption patterns and behaviour?*

CIWM declines to comment.

¹ [Delivering Key Waste Management Infrastructure :Lessons Learned from Europe. November 2005](http://www.ciwm.co.uk/mediastore/FILES/12134.pdf)
<http://www.ciwm.co.uk/mediastore/FILES/12134.pdf>

- *What role do marketing strategies play in influencing more sustainable design?*

CIWM declines to comment.

- *Are there any gaps in knowledge in this area?*

CIWM declines to comment.

Skills

- *How is sustainable design integrated into the design syllabus?*

37) CIWM does not know but supports the inclusion of sustainable design into the design syllabus. CIWM would be delighted to be involved and offers its help in any way appropriate to make this happen. Centre for Sustainable Design have worked hard at this and have had a marked influence at Government and regional level but their influence at industry level has been limited.

- *To what extent are considerations of sustainable waste reduction part of broader industrial training courses?*

38) CIWM has been running Waste Awareness Certificate (WAC) courses for a number of years, to the resource and waste management industry as well as many other sectors. As the WAC courses have grown CIWM has realised the need for sector specific versions. WAC plus Construction has been developed and delivered and work is ongoing with WAC plus Healthcare².

39) It is very important that considerations of sustainable resource use and waste production are also included in course materials for design, engineering and marketing students and business qualifications in general.

Any other issues not already covered relevant to the scope of the inquiry

CIWM declines to comment.

26th Oct 2007

² See <http://www.ciwm.co.uk/pm/389>