



**ECODESIGN CENTRE WALES /
CANOLFAN ECODDYLUNIO CYMRU**

Response to Waste Reduction Consultation

House of Lords Science and Technology Select Committee

22nd October 2007





Ecodesign Centre Wales

Following a sustained programme of activity over a number of years in Wales Ecodesign Centre Wales (EDC) was established in September 2006 as part of the Welsh Assembly Government's commitment to sustainable development¹ (SD) and through funding from the Materials Action Programme (MAP)².

EDC mission:

EDC actively inspires and leads the Welsh Assembly Government, public sector organisations and higher education to enable effective ecodesign in Welsh Industry. We facilitate the open sharing of knowledge and experience with fresh thinking and integrity.

EDC advocate a joined up multi-stakeholder approach and focuses on building capacity and capabilities in industry, public sector organisations and higher education so that effective ecodesign can happen in Wales. Our message is:

Ecodesign = good design = good business practice

Central to the activities of EDC is the delivery of an **ecodesign initiative** that promotes creative approaches to resource efficiency through four core elements;

- Industry: enabling ecodesign
- Education: embedding ecodesign
- Research: international best-practice
- Communication: positioning and promoting ecodesign

EDC Response

This response is primarily based on the experiences of the EDC team of engaging with business, in particular small and medium sized enterprises (SMEs), over a diverse range of sectors (including electronics and electrical equipment, design, general manufacturing, food and drink, fashion and textiles, consumer products) over the past number of years. The response also includes the experiences of the EDC team of engaging with other key stakeholders including higher education, government policy makers and NGOs.

Note: Throughout this response 'ecodesign' and 'sustainable design' are used interchangeably. EDC view them as similar concepts depending on the context.

¹ Ecodesign is a key assistive measure in meeting the statutory obligations in relation to sustainable development (SD) through designing out waste and reducing our carbon footprint.

² EDC staff are employees of University of Wales Institute, Cardiff (UWIC) who manage and administer the funding.





Better design and the use of materials

- What role can better design and materials play in minimising the creation of waste?
 - Design can play a significant role, as part of a multi-stakeholder approach, in minimising the creation of waste through facilitating changes in business, consumer and government culture including:
 - designing waste out, i.e. taking a life cycle approach where all materials and components employed can be reused and recycled (i.e. closing the loop)
 - influencing key stakeholders to view waste as a resource to be tapped into (e.g. through targeted campaigns, better pooling of recyclate suppliers through NISP, incentives to encourage the testing and specification of post consumer recyclate etc)
 - using design as a strategic process to introduce holistic life cycle thinking through all aspects of business operations
 - employing design as a tool to communicate the benefits of taking a triple bottom line, e.g. branding could have a key role to play here
 - design specifications are often the primary link in value chains. The management and sustainability of a design specification can influence more sustainable behaviour in many companies including second and third tier suppliers.

- Are there any barriers to how knowledge in this area can best be translated and applied?
 - Barriers include:
 - the need for all of the key stakeholders to make this connection, i.e. be open-minded on the value of design
 - lack of leadership, i.e. designers can lead the way but all stakeholders need to take responsibility and accountability from government through to the consumer
 - lack of 'joined-up' thinking, i.e. not building upon existing strengths and encouraging growth and innovation in competitive, added value sectors,
 - lack of government intervention/support to help prove the case
 - a lack of, and poor communication of, best practice examples, i.e. more results are required to prove the case, particularly for SMEs, and these messages need to reach the appropriate target audience.





- there is a lack of clear mechanisms for communicating and transferring the required competencies through the value chain. Some new regulatory approaches may improve this e.g. REACH. Also, some companies are taking a proactive approach to this - See <http://www.nokia.com/A4211227> (an isolated example many other companies do similar)
- **What factors influence the use of materials? In what way do considerations of sustainability feature in the selection of most commonly used materials?**
 - Factors that influence the use of materials are wide and varied ranging from aesthetics through to performance and cost. Sustainability is not a key consideration at the moment although more and more businesses are beginning to take certain aspects of sustainability into consideration such as ease of material recycling. This is more common practice with larger businesses (i.e. companies such as Panasonic, Herman Miller). Drivers include legislation, consumer demand and supply chain considerations.
 - New regulations such as REACH will potentially have a positive influence on material selection. This is if the required level of transparency and sharing of safety data is achieved.
- **To what extent do product designers and engineers take into account the availability and the end of life impacts of raw materials?**
 - Generally for SMEs this is not viewed as a priority at the moment. Some large businesses would take this into account as part of their environmental and social responsibility or because of legislative drivers (e.g. WEEE directive).
 - There are too few examples proving the application of sustainable materials in products and therefore too many perceived risks of using unproven materials.
 - There is poor access to knowledge on end-of-life impacts of specific materials. LCAs and R&D are extremely costly limiting further the data available for SMEs.
- What impact does the development of new materials have on design? How much interaction is there between material scientists and designers?
 - New material development offers exciting opportunities for design. Generally there is not enough interaction between scientists and designers.
 - There are some negative impacts of new material development on sustainability such as compatibility and recyclability. These





are difficult issues to communicate, hindered by the fact that there can also be a lack of independent data available.

- Can better designed products offset the increase in consumption?
 - Better designed products have a key role to play but in the long-term we need to facilitate a wider cultural change across society in terms of needs and wants and in terms of what we view as resource, i.e. functional products instead of fashionable products.
 - Products (including materials) should bear their true life cycle costs.
 - 'Better design' generally perpetuates consumption through creating cycles of dissatisfaction. e.g. latest model and latest functionality. It is a subjective topic and we would need to define 'better design' i.e. is durable better? And if it costs more, is that socially acceptable?
 - For some products a reorganisation of the business model may be required e.g. through functional sales or product service systems. It is important to note that product service systems are not automatically more sustainable.

- Are there any other gaps in knowledge and how are they being addressed?
 - Crucially up to 99% of businesses in the UK are SMEs. Transferring the knowledge and experiences of the larger businesses and other stakeholders (e.g. research centres, NGOs, academia, support services, consultants etc) is crucial if we are to move towards a culture where all stakeholders view waste as a resource. We need to create appropriate platforms for this to happen. It will take time, requires careful planning but yet the approach needs to be flexible to account for the diverse range of needs and situations (there is no 'silver bullet'). As of yet this has not been addressed in any great depth. EDC are currently working on an initiative to explore ways how these platforms can be created through a unique capacity building approach. This includes a demonstration project with 4 growth SMEs in the manufacturing, electronics and food and drink sectors to gain a clear understanding of how ecodesign can be embedded in their business strategy. This includes gaining an understanding of both the quantitative and qualitative indicators.
 - There are a small number of resources that offer the opportunity for designers to select more sustainable materials – these need to be better resourced, validated and marketed – see <http://www.ecospecifier.org/>
<http://www.materialconnexion.com/pa1.asp>





- Higher Education (HE) institutions are a key component of long-term capacity building for ecodesign. There are significant gaps in the HE curriculum.

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?
 - The current framework does not provide clear incentives.
 - There are not clear channels of communication to businesses. The current models do not appear to be reaching the right audience. Communication needs to be substantially improved especially in relation to targeting SMEs.
 - Businesses view the framework as a threat and not as an opportunity to innovate, develop and grow in a sustainable way.
 - Most SMEs sit outside the relevant regulatory framework but have a large cumulative impact. e.g. their individual tonnage waste output is under policy thresholds. Because of this they require different drivers, such as government procurement, and often these are not communicated or considered when developing policy interventions.
- How central is sustainable design to business thinking? What initiatives are in place to encourage this and are they meeting business needs?
 - While environmental performance is gaining more of a focus sustainable design (or ecodesign) is still not central to the vast majority of businesses.
 - EDC run an initiative to encourage ecodesign which is beginning to gain an understanding of the real needs of SMEs and other stakeholders (www.edcw.org)
 - Other UK organisations that have ran initiatives in the past 7 years include Design Wales (Ecodesign Initiative 05-06 – EDC evolved from this), Centre for Sustainable Design (Ecodesign Training for Manufacturing, Use and End-of-life for SMEs), University of Sheffield - Environmental Business Network. Organisations such as Design Wales and Envirowise also provide support to business through specialist advisors.
- What other measures can promote a focus on waste reduction among businesses?
 - Incentives such as industry awards, certification, accreditation,
 - Access to training and development tools
 - Targetted forums, networks and information sharing platforms
 - Peer-recognition and support





- Partnerships between large companies and SMEs
- Coaching and mentoring
- Links to higher education

- What lessons can business learn from international experience?
 - Ecodesign or sustainable design = good design = good business practice.
 - Ecodesign or sustainable design is not an isolated or add-on activity. It's central to your business strategy.
 - Change takes time, needs leadership and requires a joined up, multi-stakeholder approach.

Government policy

- What is and should be the role of Government in addressing the issue of waste reduction?
 - Government needs to take a lead role along with working with key stakeholders to create platforms for moving forward
 - One of the potential opportunities the government has to influence change is through its own procurement process. There is emerging empirical evidence of the effectiveness of procurement as a market transformation tool. See <http://www.iclei-europe.org/index.php?id=procurement>
 - Government needs to drive sustainability and resource efficiency agenda across policy regimes such as regional development and innovation.
 - Government needs to lead the way by driving resource efficiency within the government estate.
 - Many of the products consumed in the UK are imported and this places a different scope on the problem. Government needs to build on international cooperation to drive resource efficiency through global supply chains. Aspects of this issue in particular should be addressed through the Marrakech Process.

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

- Any link up with with strategy or action plans needs to be matched with timely implementation of subsequent policy mechanisms. Recent confusion and delays over specific legislation sends out a confusing message to industry

- What lessons can be learnt from other countries – within the EU and globally?
 - EDC undertook a comprehensive international best practice study in 2005 (when some of the team ran an earlier ecodesign





initiative for Design Wales) on what government could do to stimulate ecodesign in Wales. Key lessons from this included:

- Take a long-term multi-stakeholder approach
- Need to embed ecodesign in education, government strategies and the wider business and environment support network
- An initiative is a useful start point. This initiative requires:
 - a clear vision and timescale
 - demonstration phase
 - strong engagement with industry and design community
 - post initiative support mechanisms
- Use appropriate tools and methodologies for SMEs
- Focus on supply and demand side activities

Consumer behaviour

- How can better product design be used to effect a change in consumption patterns and behaviour?
 - Product design taking into account consumer lifestyles can effect change.
 - Design has always been effecting change in consumer behaviour. The intention needs to change.
 - There are some recent examples where product design is being used to translate issues such as energy consumption into simple feedback loops for users. This is helping to visualise the invisible aspects of un-sustainable consumption. See <http://www.diykyoto.com/> <http://www.tii.se/groups/power>
- What role do marketing strategies play in influencing more sustainable design?
 - Marketing is crucial because it can have a major influence on product design and strategy by responding to, and creating, market demands.
 - Marketing can also act as the communication mechanism to inform and education consumers of environmental benefits. This can be achieved through direct company communications and also through campaigns and ecolabeling initiatives.
 - The Chartered Institute of Marketing are taking up the sustainability issue and offering advice to its members – see <http://www.cim.co.uk/cim/ser/html/knoTopic.cfm?objectID=F64FBC16-620E-4E20-9A8E37B29C5E8A62>





- Are there any gaps in knowledge in this area?
 - There is very little knowledge on how to change consumer behaviour
 - Environmental policy has been unsuccessful in changing behaviour and bringing about transformations (social or technical). The policy agenda needs to take into account market, government and system failures.
 - There is a growing body of research on sustainable consumption but it is still largely academic and complex. This makes it difficult to transfer into policy or strategy. Examples of research areas include Sustainable consumption, consumer values and lifestyles.
 - There appears to be confusion over what sustainable consumption is and conflicts on approaches - i.e. technology oriented strategies can lead to the rebound effects (where efficiency gains lead to over-consumption)

Skills

- How is sustainable design integrated into the design syllabus?
 - Currently this is quite ad-hoc. It is not currently common practice to have sustainable design embedded in mainstream design syllabus.
 - EDC view the provision of ecodesign support to the Higher Education (HE) institutions as a key component of long-term capacity building for ecodesign. An immediate priority for EDC is put the foundations in place for embedding of ecodesign and life-cycle thinking in mainstream design degree courses across the 4 Welsh universities offering design education. This is to ensure that in the medium to long-term all design graduates in Wales are "literate" in the issues of sustainability and ecodesign.
 - The design curriculum is over-crowded and Higher Education institutions struggle to integrate sustainable design modules. The key is to have teaching resources that complement and enhance existing curricula.
 - The message we are receiving from Higher Education is that "sustainability should simply be part of how they teach design" and not as separate and de-contextualised modules.
 - Often the delivery of sustainable design modules is dependant on individual experts. There is a need to build capacity across all levels of staff and allow for ownership, knowledge management and skills retention.
 - Creating more fruitful linkages with industry projects is required to help students (and lecturers) see the theory in practice.





- There is a need to build capacity in training provision for design and technology teachers in the post-16 environment.
- To what extent are considerations of sustainable waste reduction part of broader industrial training courses?
 - Most waste reduction industrial based training is self taught in response to a direct business challenge.
 - More formal training for SMEs has been predominantly delivered by business support organisations undertaking on-site waste audits or encouraging employees to attend short courses / seminars.
 - Trade associations disseminate relevant information via newsletters and seminars to all member organisations. This enables industry champions to obtain timely, although tailored, information.
 - Lecturers undertake self-directed learning or attend forums and events targeting educators.

Respondents

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