

Reports of individual Workshops

Workshop No.:	BE-1
Place and Date:	Brussels, September 12, 2005
Topic:	Business Benefits through Eco-Design – Beyond WEEE and RoHS
Description of the selection of the location	
<p>Brussels is located right in the Center of Belgium. English as workshop language is chosen to attract companies from Wallonia as well as the Flemish part of Belgium. (Furthermore, this workshop was intended to provide even an international outreach). As basic workshop material (basic presentation slides and introductory text) is also available in French, this event was intended to also companies from neighboring France regions. The Netherlands are also within reach and as there will be no overlaps with the programme in Delft (basic presentation in Delft prepared and hold by Ab Stevels, TU Delft) it might be attracting for companies to attend even both workshops to get an even broader overview on the issues.</p> <p>Agoria as major industry association is actively involved. Agoria has 222 member entries for the sector electrical engineering and electronics, and 238 member entries for the ICT sector. These companies are the major target population for this workshop. The electrical and electronics sector in Belgium comprises mainly following product groups :</p> <ul style="list-style-type: none">▪ Products and electrical and electronic systems, destine for the market of the building management▪ Lighting equipment▪ Equipment for the transmission and distribution of electricity▪ Electrical household appliances and batteries▪ Professional electronics▪ Electromedical appliances	

Preparatory work for accessing the target population (information, publicity activities, method of advertisement)

Agoria, the Belgian branch organisation acted as co-host of the Brussels workshop. Further support was provided by the Katholieke Universiteit Leuven, Centre for Industrial Management, who are experts in the field of ecodesign in the electrical and electronics sector

Communication Plan followed:

- Agoria Online:
3 publications on EcoDesign + announcement of the workshop (8000 contacts)
 - o 24 August
 - o 31 August
 - o 6 September
- Direct Mailing to R&D, Prevention and Environment managers in the Electronics and ICT sector
 - o 1 September
- Online Banner in Agoria Online
 - o From 24 August on
- Contacts through IWT and RISS (Regional Innovation Points) networks
- Mailinglist based on previous seminar organized by Leuven Inc.

Promotion in Luxemburg:

- debelux, Deutsch-Belgisch-Luxemburgische Handelskammer
- FEDIL A.s.b.l./ FEDIL Brussels office

material presented in the workshop

Workshop handouts:

Print-outs of the slides:

- “An Introduction to EcoDesign Strategies – Why, What and How?” (K. Schischke)
- “The European Framework Directive on Energy Using Products: How and when will it affect your business” (Stephan Belaen)
- “Ecodesign stimulating initiatives of the Flemish government “ (Wouter Ulburghs)
- “Integrating eco-design early in the product development process” (Wim Dewulf)
- “Eco-design Toolbox for Electricity Using Equipment (EuP) - an Industry Based Pilot Study Initiated from the European Copper Institute” (Constantin Herrmann)
- “Industry case: Punch Graphix” (Chris Block)

“A Guide for Eco-Design Tools”

Introductory text: “An Introduction to EcoDesign Strategies – Why, what and how?”

Feedback questionnaire

Registration list

Participation summary

51 participants attended the Brussels workshop, several more registered, but did not show up.

Thereof 20 participants have been from SMEs

The other 31 participants are representatives of

- Several large enterprises
- Academia and other research institutes (mostly those, which are already very active in this field)
- Associations
- Consultants / service provider

EE sectors represented by the SMEs are e.g.

- Building / installations
- Time registration / parking systems
- Printers
- R&D design services
- Power supplies

Although the event has been promoted also in Luxemburg specifically, there have been – besides the presenters – only Belgian participants plus one from the Netherlands.

Minutes of discussion and conclusions of the workshop

Questions and comments from the audience:

- Expectation regarding the overall workshop: Advice, how to consider environmental aspects within technology development (expectation mentioned by an R&D institute representative)
- Comparability of different environmental impact categories – especially when using screening indicators – e.g. toxicity vs. energy consumption?
- How to develop a strategy for an individual company?
- Is my product covered by RoHS/WEEE?
- Scope of the EuP? Will cables etc. be covered by implementing?

Several participants showed strong interest in further information (hint at the teaching material) and the slides for company internal use.

A “philosophic” discussion evolved regarding the aspect, if software tools could replace design decisions – and it has been made very clear, that software can only assist in assessments, but not in design itself (of course, design options can be assessed again to evaluate the success of a design decision).

The presentation given by Mr. van de Velde stimulated some discussion specifically:

Q: Regarding the consumer relation: Is LCC taken into account and communicated to the customers?

Van de Velde: No LCC calculation / argumentation is provided, just LCA profile and hint at good recyclability, durability, quality

Q: Methodological question regarding the calculation of the use phase: What is calculated: Efficiency loss only or whole energy that enters the heat exchanger? It might be appropriate only to calculate the efficiency losses as the head demand is a parameter that is independent of the exchanger.

Van de Velde: Fuels burned over the whole product life cycle, not only efficiency losses are considered in the example.

Final discussion on follow-up proposals: What assistance do SMEs need?

- A need for data exchange standards, specifically regarding LCA data was mentioned. It is specifically needed to make clear a defined set of parameters for such a tool/software – and such data is needed on e.g. component level to facilitate a comparison of design options.
- Input by C. Herrmann: For the electronics sector such a standardisation is not likely to happen mid-term (or even long term), plus the problem of up-to-date data and the large variety of data for electronics specifically.
- It has been asked, if it might be possible to provide such data at least for “simple” products, e.g. motors – unanswered is the question who might pay for compiling and updating such data.

Detailed description of the experience (such as similar finished projects, successful cases of introduction of eco-design in SMEs)

The public waste agency of Flanders, OVAM, is active on eco-design projects already for a while from the “waste perspective”, minimising waste through design measures. As early as 1997 OVAM undertook an ecodesign project for SMEs with VITO: 6 products involved and screened on ecodesign, showed the importance of ecodesign potential of the product and the motivation of the company.

In 2001 OVAM initiated Factor10, the Flemish Information Centre for Ecodesign. Currently OVAM develops an “ecodesign tool” for designers, based on eco-indicator 99 (quick scan of the product) – but not EE sector specific. www.eco-efficiëntie.be .

Life project: Toplight introduced Vija spotlight, used the most efficient lighting technology, but first did not care about material issues – and realised significant material savings.

KU Leuven currently researches the integration of eco-design *early* in product development. Concept: To integrate environmental aspects at a stage, where information about the product is fairly limited. Approach: LCA, but not in detail, but rather identification of the order of magnitude.

Product example (Eco-PaS methodology): Electric fruit juicer: Some components are evident, namely press tip, jug, housing, motor and connection to the power grid. Step 1: Make clear the “building blocks” of the product, plus a rough specification of these components (input values). Step 2: Calculate average eco-indicator points with derivation: Comparison of contribution of modules to average with contribution of modules to opportunity range – in the example the motor turns out to contribute significantly and imposes significant opportunities for improvements. Step 3: Focus on the motor, select an appropriate motor. Step 4: Re-calculate the improvement potential, proceed with other relevant components

Web based version for demonstration is available (www.mech.kuleuven.be/lce). It is intended to extend the database to make it usable for a broader range of devices.

Currently it does not contain electronics specific data.

Industry based pilot study initiated from the European Copper Institute (see also Berlin workshop report): Phase one focuses on the development of an EcoDesign tool for motors, transformers and cables, second phase will transfer the methodology /

results to other industrial facilities.

Jaga:

Products: Heat exchangers and radiators, 400 employees

Philosophy: 100% satisfaction for specific target customers, internationalisation is a very important aspect and there is significant pressure from the market. The focus on high quality products covers at Jaga explicitly also covers environmental aspects.

Image building is very important to Jaga.

In 2001 Jaga initiated an ecodesign project, targeting first at obtaining knowledge on the environmental profile of their products. Benchmarking with competition is a key issue: "How good are we in our sector?". The project was undertaken in cooperation with the Belgian VITO, using the software Ecoscan based on eco-indicator 99. Jaga performed for one of their heat exchangers a calculation of the environmental performance according to the LCA methodology. Ken van de Velde, Jaga: "When you go through this process you learn to know your product very well... and you start thinking, why do we do things the way we do it?" Product and process complexity definitely is a challenge. It should be noticed, that the assessment methodology gives insights and assessments, but no solutions – that is still the task of the engineers.

The project plan followed at Jaga:

- Product choice
- Data collection
- Analysis of the product by software – the use phase effects 99,5% of environmental impacts of the overall life cycle (according to eco-indicator 99 assessment, 20 years life time) - Optimisation of the energy-efficiency with 1% may justify an increase of raw material by 100%!
- Brainstorming session – being the most important step in the overall project, bringing together the different internal experts: Identification of several actions, e.g. improving energy-efficiency, and material choice
- Define next steps (implementing measures)

A major focus in the company is now sustainability, clearly identified in Jaga's mission statement.

Van de Velde: "Environmental and economical considerations are quite compatible, especially in product development. A sustainable product is often a better product and offers more added value to the end-user."

Punch Graphix

Main products of the Belgian company Punch Graphix (610 employees) are computer-to-plate (CTP) imaging equipment in offset prepress processes and digital colour printing.

The mission of Punch Graphix comprises to develop and deliver environmental friendly digital printing and prepress solutions. Punch Graphix is mainly an R&D company, whereas mainly SMEs supply the components for the equipment. It has to be noted, that the product and component design – including for example PCB layout – is done by Punch Graphix, not by the suppliers. Consequently the suppliers have close to none influence on the design of the products they manufacture.

The eco-design objectives of Punch Grafix are:

1. To fulfil existing and to anticipate future environment related product standards and customer requirements
2. to design new innovative solutions which are environmental friendly
3. to communicate the environmental advantages of the Punch Grafix solutions to the market
4. to reduce the recycling cost of the systems they bring to the market

The approach followed by Punch Grafix to improve the products can be split up in 8 design strategies:

1. Function fulfilment optimisation
2. Raw material substitution
3. Raw material usage reduction
4. Process efficiency improvement
5. Distribution optimization
6. Energy usage reduction
7. Lifespan optimization
8. Product disposal optimization

Example: Xeikon – a high-end integrated digital colour printing solution. Target markets are: Printing of official documents (passports, driving license...), industrial printing (packaging, label...) and commercial printing.

Pointing out the first of the above mentioned design strategies (function fulfilment optimization) the Xeikon solution shortens the printing value chain, driven by

- Lower cost per printed page (TCOP = “total cost per page” as a key figure)

- Shorter print-run lengths
- Print on demand
- Increased usage and quality of color
- Increasing demand for flexibility and variability

These functional characteristics result in ecological advantages: no emissions, no water consumption, less energy, and reduced waste compared to offset printing.

Regarding lifespan optimization the Xeikon system has been clearly enhanced:

Normally this type of equipment is outdated in 3 years due to technological progress, but the Xeikon system has an extended life time of more than 10 years by

- Upgrade kits keeping customers at toplevel quality
- The different modules and spare parts have been designed specifically for increased lifespan – driven by TCOP

Clearly, Punch Grafix optimised the equipment for a very efficient use phase as there business is based rather on the service of printing they provide than selling machines. Selling service frequently leads to better products – as ownership stays with the manufacturer.

VITO is a key player in Belgium regarding ecodesign, providing extensive support for companies.

Proposals for follow-up activities in the area in the given location

Compared with the other workshops of this campaign, the Brussels workshop has been the most “LCA oriented” one.

Consequently, the discussion on needed follow-up activities got a clear LCA touch:

Especially the need for appropriate basic / generic data and the development of standards for data exchange have been mentioned as a need to be enabled for LCA-based eco-design. However, consensus has been reached, that this is a long-term activity (if manageable for the electronics sector at all). Therefore it was recommended to initiate such a data base / standardisation project for “simpler” products first, such as motors (see overlaps with the project of the European Copper Institute).

Furthermore, the Eco-PaS approach presented by W. Dewulf (Leiden) was

appreciated by the audience, but it has to be noticed, that this method by now is only applicable for a limited number of products, e.g. electronics assemblies cannot be assessed by this method (missing database background). Consequently, the approach undertaken by Dewulf et al. needs further support to reach the stage of broad applicability.

The need for appropriate dissemination and teaching material for company internal uses and association uses has been mentioned by several participants. A sound set of slides and appropriate teaching material was requested – exactly what will be delivered by Task 2 of this workshop campaign in a few days.

Regarding the overall campaign, the Belgium example shows the importance of a strong local eco-design network, comprising research (KU Leuven, VITO) and governmental support (OVAM) to result in a couple of eco-design activities undertaken by enterprises. Despite all still existing gaps, especially regarding the specific needs of the EE sector, this support structure could be good archetype for other regions as well (with an Europe wide coordination to make use of synergy effects).