Section Life Cycle Management

Conference Reports

The Purpose of LCA in Environmental Labels and Concepts of Products

18th Discussion Forum on Life Cycle Assessment

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Environmental labeling became a popular tool to promote a product, and at the same time to inform the consumer about environmental characteristics. However neither the scientific basis of labels is always given nor the comparability between different labels and labeled products. The purpose of this discussion forum was to promote the integration of LCA in environmental labeling based on ISO. The first part of the discussion forum showed different approaches to the application of EPD (Environmental Product Declaration) in large companies like ABB and Siemens. Afterwards an overview of different textile labels was given in order to specify differences and similarities. The afternoon was opened by the presentation of norms and regulations of IAO concerning environmental labels. The following short presentations highlighted different topics – two labels based on LCA are introduced, also the role of EPD in EU politics is presented. The panel discussion closed the event with the discussion of regulatory, scientific and social requirements for environmental labels.

Preamble. The introduction to the subject by Dr. MARION TOBLER (ETH Zurich) on basics of labeling highlighted different classification schemes for labels based on grouped requirements. A basic criterion is company owned labels and labels controlled by a third party. Company-owned labels may be based on the product or the organization. Labels controlled by third party may be mandatory by government or institutions, or optional. Furthermore, three groups of environmental labels are distinguished: 1. labels with conformity to governmental and national standards like 'bio' or 'organic', 2. labels as company standard with conformity to a third party like Oeko-Tex 100, and 3. labels as company standard with conformity to a company like Coop Naturaline, Ecocollection by Esprit. As a conclusion, different problems concerning environmental labels were stated: lacking standardization, trade limits, lacking transparency of the market, no self-regulating markets, and no studies on the effects of labels on trade.

1 Application of EPD in Large Enterprises

HANS-UELI RIESEN (ABB) presented the role of EPD in B2B and stated that until now the focus in the company was on the company ecology, but lately the product ecology became more and more important. The share- and stakeholders ask for quantifiable environmental data about the products. The EPD is an answer to this need. The EPD is a Type III environmental declaration based on ISO/TR 14025 and should support the sales of a product. The EPD describes and communicate the environmental impacts and performance of a product, system or service for its whole lifecycle. Before issuing an EPD for a product, a PSR (product specific requirement) has to be defined. The PSR is notified and published in this case by the Swedish Environmental Management Council. Based on the PSR, an LCA can be performed by the company and verified by a third party. Based on the LCA, a certifiable EPD can be elaborated and published by the Environmental Council. As a matter of fact, until now there is only little interest shown for environmental information at ABB. Customers are more interested in hazardous substances contained in a product as well as in packaging. As a conclusion, eco labels

are rated as a successful tool in the market for products and investments. The final question is stated here: Should EPD be replaced by SPD (sustainable product declaration)?

Dr. BERNHARD BÜHLER (Siemens) talked about **LCA, EPD and Siemens-standards for products in global trade** and introduced a different approach to provide environmental data to the customer. Siemens introduced the Siemens standard SN 36350. This standard applies for all stages, which contribute to the environmental performance of a product: marketing, mechanical and electric design, production, logistics and supply. The standard comprises seven parts and a step-by-step procedure with explanations and examples. Part 1 defines the guidelines for product design (including LCA for internal comparison), Part 2 deals with hazardous substances and provides a list of forbidden substances and substances to be avoided. Part 3 evaluates the recycling and mixing of thermoplastics. Part 4 indicates the recycling and mixing of metals. Part 5 deals with packaging. Part 6 comprises the components of a product. Part 7 is the environmental declaration of the product. For new products, environmental declarations are issued, which inform about the environmental impacts and performance of a product. The following parts are contained in the environmental declaration: specification of the product, process performance (management systems), use of the product (energy consumption, maintenance, and environmental performance), environmental risk when burning, packaging (material, weight), material, special components, dispose of product, comments. The LCA data is used only internally and not for consumer information.

2 Ecolabels of the Textile Sector

KATHARINA PAULITSCH (itfits) gave an overview on textile labels: **Environmental labels and their scientific background in the textile sector.** There are a number of deficits of environmental labels of textiles: lack of information and data, global production and trade structures, application of textile chemicals is not evaluated, lacking coordination in the textile chain, concentra-

tion on human protection not on environmental impacts, and no accordance on standardized label. Within the conference of INTERCOT 02, goals for the introduction of a standard for textile labels where issued: standardized definition of ecotextiles, audit and inspection of the entire product chain, setup of a data base, quality analysis, optimizations, communication with simple key data, different control sectors, simple and transparent certification process. The introduction of a standard for textile labels with minimum requirements concerning labeling parameters would be the first step in the right direction.

JEAN PIERRE HAUG (Testex Switzerland) informed about the Oeko-Tex Standard 100+, the integration of the lifecycle of a product into a health label. Testex is a Swiss controlling laboratory of textiles, which checks on textile ecology, the health risk and the product ecology of textiles, and certifies products with the Oeko-Tex Standard. More than 5000 products are certified, whereof 70% of them in Europe. The Oeko-Tex Standard 100 checks if no harmful substances for human health are contained in the textile. A textile is labeled with this standard if all the components like sewing yarn, buttons, a.s.o., are also certified. Since 1995, the Oeko-tex Standard 1000 controls the producing company's ecology concerning compliance to local legislation, technologies, chemicals, working conditions, management systems, and other requirements. The combination of both standards 100 and 1000 for a product results in the certificate Oeko-tex Standard 100+. Until now, about 25 certificates are issued. The Oeko-tex Standard 100+ is the first textile certificate that integrates human ecology and product ecology along the production life cycle of a textile. The number of certificates issued shows that the compliance with this standard is a difficult task.

3 ISO-Standards for Environmental Labeling

GABRIEL CADUFF (Tensor) introduced ISO-Standards for environmental labeling. The general requirements of ISO are stated in ISO 14020. Three types of labels are distinguished in ISO: Environmental labels and declarations (Type I environmental labeling ISO 14024), self declared environmental claims (Type II environmental labeling ISO 14021), and technical report- environmental labels and declarations (Type III and Type IV environmental declaration ISO 14025). General requirements by ISO for an environmental label are: clear, verifiable, pose no trade obstacles, based on scientific methods, provide information to interested parties and consumers, and involve the important aspects of the product's lifecycle. The self declared environmental claims are issued by the producer or provider who himself creates the label, applies the label and controls the fulfillment of the requirements. Examples for this type II environmental labeling are: coop naturaplan, Bell Natura, DELINAT. An environmental label and declaration Type I is issued by the owner of the label. The label owner provides the label to the producer or provider and controls the fulfillment of the requirements of the label. The producer or provider applies the label for this product. Examples for his type I environmental declaration are: BIO, BIO Migros, Swiss Quality. The environmental declaration Type III is certified by an accredited body. The producer or provider defines the product information based on an LCA and asks for a product declaration for the product. The producer or provider also defines the information provided by the declaration, provides the appropriate data for the product, and uses the declaration for his product after certification. An example for an EPD was presented earlier by Hans-Ueli Riesen from ABB.

4 Short Presentations

THEO SCHILTER (UMBRA) on labels for product disposal presented a concept for icons for disposal. Many products indicate the consumer what should be avoided at disposal. The new concept introduces iconsthat should be visible on the product when bought and indicate how the product should be disposed. This new concept is called TriaQ, for Switzerland TriaSuisse. Four icons symbolize the disposal way of the product: decompose, in the garbage, to recycling, and back to the sales place.

NIELS JUNGBLUTH (ESU-services) on Environmental labeling of green electricity with LCA key parameter models discussed the label 'Nature-made star' for the environmental labeling of electricity. The valuation criteria of nature-made star are divided into local and global criteria. The local criteria concern the surroundings of the power plant plus a certain region. The global criteria are based on an LCA. With a model of key parameters based on a detailed LCA, the owners of power plants can verify themselves if their plant complies with the limits of the nature-made star label.

The presentation of EVA SCHMINCKE (Five Winds International) on the integration of EPDs in IPP stated that the environmental product declarations according to ISO TR 14025 (declarations based on LCA data) are intensively discussed within European environmental politics. The presentation gave an overview of the development of EPDs in Europe in various industrial sectors. Interfaces were pointed out between EPDs and the main tools of IPP: EMAS; environmental labels, ecodesign, and public green procurement.

5 Conclusion

This very interesting Discussion Forum showed the different points of view of basic science and applied science in practice concerning environmental labeling and the lacking comparability between them. Practitioners and consumers stated the large amount of labels. At this point environmental key-parameter models like the one presented for green electricity could be an option. For LCA-researchers it was clear that environmental labeling ought to be connected to an LCA or a comparable environmental valuation method. ISO offers four types of labels and if every label on the market would be ISO-conform and declared as such, comparisons would be much easier. Practitioners from companies stated that a lot of environmental data about there products gained from LCA or similar methods is available, but that the consumer is not yet interested in this kind of information. But in any case their companies will go on issuing environmental declarations for products, hoping that in the long run consumer's interest and choice will include environmental performance. The discussion in the panel also showed that social aspects are not preferably integrated in an environmental declaration but separate in a social declaration because the evaluation methods are totally different. In any case, the interest of the consumer in the social circumstances of the production of goods is steadily increasing.

References

ISO 14020 Environmental Labeling
ISO 14021 Environmental labels and declarations – Self-declared environmental claims (Type II environmental labeling)
ISO 14024 Environmental labels and declarations – Type I environmental labeling
ISO 14025 Environmental labels and declarations – Type III environmental declarations