

- A distribution/export scenario.
- A use stage model.
- A rough disposal stage description, including information on what is recycled, deposited or incinerated.

What is not needed, saving considerable time, is a detailed inventory for the manufacturing stage and the actual up-to-date inventory data for all of the raw materials extraction and pre-manufacturing life cycle stages. The manufacturing stage is simply handled by putting a black box around the whole of the manufacturing site and allocating inputs and outputs to the product at hand in a reasonable manner. This obviously produces some uncertainty about the data basis for handling of this life cycle stage, but in practice is it quite easy to pin-point where impacts come from in the manufacturing stage once the result of the screening study exists, and to sort out further if they are significantly linked to the product in focus. The handling of the pre-manufacturing stage relies to a large extent on available data in the LCA database. This data are not fully up-to-date, but will nevertheless reveal major improvement options. Most western companies can now deliver the needed inputs quite quickly, or they will be able to do so in a not so distant future.

There are two basic requirements, though, and that is the availability of a fairly comprehensive database in which energy mixes and pre-manufacturing data, etc. are stored, and the services of an LCA modelling and computation tool. These databases and tools are now on the market from several vendors.

The present study serves to illustrate that solid statements on major improvement potentials can still come out of a screening level study. The resulting profiles and breakdowns do indeed point to focus areas in the product.

7 Conclusion

As carried out in this study, the screening level LCA requires a relatively limited effort and has produced an account of the major focusing points or improvement potentials in the ABB EU 2000 air handling system. The assessment is quan-

titative and rests on a detailed, although not fully validated, data basis, and requires only a few working days to be performed, given that the producer is geared to supply the basic input information. This input information is much less comprehensive than that of a full LCA, and in terms of effort the screening level LCA places itself in between full, comprehensive LCA and streamlined LCA.

Most manufacturers will have the input information available in terms of existing documents, and having been through the exercise once, the next screening level LCA is easier to perform. The screening level LCA can also act as the first iteration of a full, comprehensive LCA

The result can be used for major initial steps forward in terms of product-wise ecological improvements, and does provide both focus and direction in the early stages of a company's life cycle engineering efforts. Once all the "low hanging fruit" has been picked, however, there is a need for a more solid and comprehensive approach, as for example the full LCA approach linked with comparative studies of the improvement potentials of existing and emerging technologies.

8 References

- [1] Our Common Future (1987): World Commission on Environment and Development, Oxford University Press
- [2] WENZEL, H.; HAUSCHILD, M.; ALTING, L. (1997): Environmental Assessment of Products, Vol. 1: Methodology, Tools and Case Studies in Product Development., Chapman & Hall
- [3] HAUSCHILD, M.; WENZEL, H. (1997): Environmental Assessment of Products, Vol. 2: Scientific Background. Chapman & Hall
- [4] LEGARTH, J.B.; NILSSON, J. (1997): Re-design of Electromechanical Products for Re-use and Recycling – A European Initiative., Proceedings of the 1997 IEEE International Symposium on Electronics & the Environment. San Francisco, May 1997, pp. 1-6
- [5] The prototype EDIP database and a beta version of the EDIP software are available through the Danish National EPA in Copenhagen, Strandgade 29, DK-1401 Copenhagen K, Denmark, phone ++45 3266 0100

Received: May 15th, 1998

Accepted: October 27th, 1999

Online Publication: November 19th, 1999

Books

Perspectives in Life Cycle Impact Assessment: A Structured Approach to Combine Models of the Technosphere, Ecosphere and Valuesphere

•
Author: Patrick Hofstetter

•
Publisher: Kluwer Academic Publishers, Boston; November 1998; 504 pp., hardbound; NLG 360.00 / USD 159.00 / GBP 108.25; ISBN 0-7923-8377-X

This book describes the relationship between subjective and objective elements in Life Cycle Impact Assessment. It suggests a new framework which will allow people to master two of the major problems associated with LCA, the difficulty of separating subjective from objective elements and the tendency for impact assessment to record 'phantoms' rather than actual damages.

•
This book presents a proposal for a second generation framework and method for Life Cycle Impact Assessment. Many of the suggested elements are either based on other tools for environmental analysis, e.g. risk assessment, or fit in well with tools and concepts such as industrial ecology, technology assessment, or environmental impact assessment. The research presented in this book goes beyond the scope of presently used methods for Life Cycle Assessment and may stimulate new developments in a variety of areas.

•
This book appeals to persons from a wide range of scientific disciplines who are interested in learning more about Life Cycle Assessment. It is especially valuable to members of SETAC and to students and researchers in the fields of environmental impact assessment, risk assessment and industrial ecology