

Report from the 8th SETAC LCA Case Studies Symposium

BY BO P. WEIDEMA, 2.-0 LCA

CONSULTANTS, WWW.LCA-NET.COM

Brussels, 30 November 2000

Focus of the 8th SETAC LCA Case Studies Symposium, held at Sheraton Airport Hotel in Brussels, was issues of uncertainty, data quality, critical review, and targeting for decision making. The overall topic was 'Increasing credibility of LCA'. Four-page 'extended abstracts' of both platform and poster presentations are published in 'Presentation Summaries' (113 pages, www.setaceu.org). The platform presentations were interspersed with poster screenings, poster reviews and discussions. Vivid discussions among the 80 participants were stimulated by invited expert opponents and poster observers.

In the session on uncertainty and data quality, Benoit Maurice from EDF showed how the use of data quality indicators were an essential part of communicating uncertainty, while the use of detailed quantitative uncertainty analysis was found to be more confusing than useful for the decision maker. Marc Buridard from the International Iron and Steel Institute revealed the causes of regional differences in their LCA data, Bo von Bahr from Chalmers University of Technology showed how such differences could be systematically applied to reduce modeling uncertainty. In the same line, Andreas Ciroth from Technical University of Berlin showed that uncertainty linked to internal links in the system were more important than uncertainty on flows to and from nature. Greg Norris from Harvard University showed how the differences were distributed over space, time and the industry sectors, also showing the importance of data gaps.

In the following discussion, the official opponent Rolf Bretz from Ciba Chemicals characterized life cycle results without uncertainties as useless for the decision maker, and official opponent Martin Baitz from Stuttgart University said that unjustified cut-offs were still a major problem in LCA.

Several participants doubted the general usefulness of Monte Carlo analyses in handling uncertainty in LCA. Konrad Saur from Five Winds and several others voiced the opinion that the largest uncertainties were not in the data themselves but in the modeling, and that these uncertainties could not always be quantified nor reduced. At the end of this discussion, the symposium organizer Bo Weidema from 2.-0 LCA consultants presented his conclusions.

First of all one must know the uncertainties in order to be able to reduce them. Furthermore, this would provide a strategy for data collection involving a reduction of the largest uncertainties until the level of irreducible uncertainty is reached. He agreed that modeling uncertainties were often the most important, and suggested that they could indeed be quantified, e.g. by the use of scenarios.

In a second session devoted to the topic of 'Targeting LCA for decision making', Alisa Duncan from SmithKline Beecham showed how they used a large database to visualize areas of more or less concern. They use this to provide general guidelines targeted at non-experts with the aim of inducing changes in behavior. Michael Bennet from the BOC Group showed the importance of stakeholder involvement and the many other concerns of the decision makers, e.g. flexibility, in their LCA of refrigerated food distribution. Peter Saling from BASF demonstrated the integration of the many decision parameters into one simple diagram. Mark Goedkoop from PRÈ ended the session with an example in which only one parameter (energy) was used, focusing on the problems of system delimitation and simple communication. In line with the platform presentations, the official poster observers Jose Potting from Utrecht University and Tomas Ekvall from Chalmers University of Technology, could report that one-dimensional performance measures were generally favored at the expense of increased credibility of using several methods.

The official opponents Sarah Cowell from University of Surrey and Greg Norris from Harvard University pointed to the contrast between the detailed analyses of the first session (on data quality and uncertainty) and the simplified methods presented in the second session for use in communication with decision makers. Preferably, the knowledge of the underlying uncertainty should also be reflected in the way we communicate our results to the decision makers, and should not be in conflict with a simple format of

presentation. We must become better at communicating the how the result depends on the assumptions, and that answers are not always clear-cut. Gøran Finnveden from Stockholm University noted that practically all presenters had used weighting methods in spite of the general recommendations of SETAC and ISO to refrain from such weighting. He wondered whether this should not prompt SETAC and ISO to provide some guidelines for weighting, rather than ignoring this field altogether.

Four panelists, Adrie de Groot-van Dam from TNO, Konrad Saur from Five Winds, Walter Kloeppfer from CAU, and Kim Christiansen of Sophus Berendsen A/S, were invited to stimulate a discussion on the use of critical review in LCA. Much experience was reported, and the discussion clearly showed that this topic was of high interest. There was general agreement that critical review could enhance LCA credibility and acceptance as well as improving the quality of the LCA itself. Especially for larger studies, the interactive review was recommended, in which the reviewers are involved both after the goal and scope phase, after the data collection and after the interpretation. When well planned, jointly with the study, and when close contact is kept between practitioner and reviewer, an interactive review can make the whole study more efficient and productive, even to the extent that it covers its own costs. Else, the costs of the review and its time consumption were among the most important obstacles mentioned for its more widespread use. Besides this practical issue, the major problem was pointed out to be availability of experts that were really experienced, really independent, really critical and at the same time having diplomatic skills.

It was questioned how independence could be assured if the reviewer was heavily involved also as an advisor in the early phases of the study. Bo Weidema from 2.-0 LCA consultants suggested that it may not always be the same reviewer that should be involved in the different phases. The review of data may require quite different skills from those involved in a review of goal, scope and interpretation. Along this line, it was also argued that reviews by interested parties should be dealt with separately from reviews of the more technical aspects. A technical reviewer will seldom have the option to question the goal or application of a study. The options for certification and accreditation were discussed, but no agreement could be reached. The closest to a recommendation in this area was the suggestion to provide lists of

reviewers in specific fields. In the end, the panel agreed unanimously on two recommendations:

- The development of a guideline for critical review, including the important issue of communication of review results, and possibly including the issue of a code of conduct or even a code of ethics for reviewers.
- The exchange of experience, both among reviewers, commissioners and practitioners, to establish examples of good practice and to highlight problems and solutions.

Bo Weidema said that the SETAC LCA Steering Committee regarded critical review to be one of the important topics for its future work.

The symposium evaluation showed wide-spread support for the new format of the Case Studies Symposium with the papers available on the Internet in advance, and the longer, prepared discussions (with opponents and/or panels), rather than the traditional short questions/answers after each speaker, and it was suggested that this format should also be used for the annual meetings of the society.