

Open workshop “Towards consistent uncertainty management in LCA – Consensus building and guideline development for handling uncertainty in LCA”

**In Association with Life Cycle Assessment IX
Boston, September 30 2009, 1pm – 7pm**

Scope and background of the workshop

Currently, the quantification and communication of uncertainty in LCA is usually omitted, firstly due to a lack of guidance in uncertainty modelling, and secondly because practitioners face hundreds of potentially relevant parameters that might change the result of a study, yet it is often unclear which aspects really matter and in what way. Efforts are needed exploring and comparing approaches to identify and quantify main sources of uncertainty, enabling to focus the data acquisition for the uncertainty assessment; all with the ultimate goal of minimising resources needed to perform uncertainty analysis in LCA.

The United Nations Environment Program (UNEP)/SETAC Life Cycle Initiative aims at three main objectives for its second phase:

1. Enhance the global consensus and relevance of existing and emerging life cycle approaches methodology;
2. Facilitate the use of life cycle approaches worldwide by encouraging life cycle thinking in decision-making in business, government and the general public about natural resources, materials and products targeted at consumption clusters;
3. Expanding capability worldwide to apply and to improve life cycle approaches.

The UNEP/SETAC working group on uncertainty management in LCA addresses all three objectives by aiming to facilitate management of uncertainty in all of the stages of an LCA study. Its focus is on the establishment of recommended practice in uncertainty assessment and estimation within LCA and on the elaboration of guidance for practitioners and method developers on estimation, communication, interpretation, and management of uncertainty in both inventory and impact assessment, assuring consistency and compatibility of approaches developed for inventory and/or impact assessment. Goal is to develop a practical framework that describes how to get uncertainty estimates, how to model the uncertainty in LCA, which are the relevant parts to focus on and which aspects can be neglected, depending on the application, and how uncertainty should be interpreted.

The goal of the working group links to all three main objectives of the UNEP/SETAC Life Cycle Initiative: 1) Enabling uncertainty information to be routinely provided for LCA results will improve trust and confidence in the method as users and decision makers will be provided with measures of confidence in the result, enabling for example to differentiate between compared options with scores that are essentially equal (revealed by uncertainty ranges) or well distinguishable. It will also provide a measure of confidence for impact indicators, as a smaller uncertainty range indicates a higher stability of the indicator, e.g. global warming potentials are likely to be considerably more certain than toxicity indicators. 2) Communication and interpretation of uncertainty in LCA can improve its acceptance on the level of decision-making as it provides a measure of confidence in the decision suggested by an LCA result. 3) The foreseen outputs regarding user/developer guidance on uncertainty will add to capability expansion and might even seed continuous improvement of life cycle approaches as uncertainty information will point out weak (~uncertain) points in the methodology or single studies.

After about two years of activity, the working group is organising a second workshop inviting interested parties and stakeholders to share their views by participating in facilitated discussions. We seek input from various perspectives ranging from a user/practitioner’s point of view to experts’ insights and all

kinds of related and relevant experiences. The objective of the workshop is to expose and discuss a first draft of an LCA uncertainty management framework and guidance document based on the results of the uncertainty working group and the first LCA uncertainty management workshop which took place in Tampa, FL in November 2008. It will therefore serve as a stakeholder consensus building event feeding into the framework and guidelines on how to implement consistent uncertainty management in daily LCA practice.

Most of the time during this half-day open workshop will be dedicated to facilitated discussions regarding the main points of the framework/guidelines:

- Decision-making under uncertainty (confidence to be right/probability to be wrong)
- Communication of uncertainty in LCA studies
- User/practitioner perspective (including software developers)
- Estimation and propagation of uncertainties in LCA
- Types of uncertainty relevant in LCA

This workshop will explicitly address issues relevant for practice and application and will not focus on technical discussions on an uncertainty expert level.

The workshop is organised by the following working group members who will also provide specific inputs to the discussion points in terms of short presentations (e.g. introducing the working group and its main goals as well as the draft framework and guidelines):

- Ralph K. Rosenbaum, CIRAIG, Montreal, Canada (ralph.rosenbaum@polymtl.ca)
- Andreas Ciroth, GreenDeltaTC, Berlin, Germany (ciroth@greendeltatc.com)
- Thomas E. McKone, University of California, Berkeley, CA USA (temckone@lbl.gov)
- Reinout Heijungs, CML, Leiden University, Netherlands (heijungs@cml.leidenuniv.nl)
- Olivier Jolliet, iMod, University of Michigan, Ann Arbor MI, USA (ojolliet@umich.edu)
- Fausto Freire, University of Coimbra, Portugal (fausto.freire@dem.uc.pt)

Preliminary time planning

Wednesday September 30:

1:00pm – 1:20pm Presentation “Introduction, context, background”

1:20pm – 1:40pm Presentation “Draft framework and guidelines”

1:40pm – 3:00pm Discussion

3:00pm – 3:20pm Break

3:30pm – 5:00pm Discussion

5:00pm – 5:20pm Break

5:20pm – 7:00pm Wrap up and adjourn workshop

7:00pm All participants are invited to further socialize and have dinner together in one of the surrounding restaurants.

Thursday October 1:

1:30pm – 3:00pm Room 2: Related Special Session “Towards a consistent management of uncertainty in Life Cycle Assessment”