State-of-the-Art

Life Cycle Management: UNEP-Workshop
Sharing Experiences on LCM
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Abstract. On August 30, 2001, the first in a series of planned global workshops on Life Cycle Management was organized in Copenhagen by UNEP in cooperation with dk-TEKNIK. The workshop provided an international forum to share experiences on LCM. The specific purpose of the workshop was to define the focus of a possible UNEP programme on Life Cycle Management under the UNEP/SETAC Life Cycle Initiative. Life Cycle Management has been defined by the SETAC Europe Working Group on LCM as an integrated framework of concepts, techniques and procedures to address environmental, economic, technological and social aspects of products and organizations to achieve continuous environmental improvement from a life cycle perspective. Life Cycle Management has been requested as an additional component for the Life Cycle Initiative by business organizations as well as governments in order to provide practical approaches for management systems in this area. The breakout groups of the workshop focussed on the role of integrating environmental management practices, concepts and tools in a life cycle perspective, on the integration of socio-economic aspects of sustainability in life cycle approaches, including the definition of adequate indicators for these aspects, on the communication strategies to promote life cycle thinking, and on the demand side of LCM. The workshop closed with a consensus that the UNEP/SETAC Life Cycle Initiative should really include a programme on Life Cycle Management with the proposed areas of work. UNEP in cooperation with SETAC should function as a global catalyst of knowledge transfer and cooperation on life cycle approaches. The key issue behind all activities would be the promotion of Life Cycle Thinking since all break-out groups mentioned the importance of well-prepared communication strategies. Another interesting outcome of the workshop is the clear interest of different stakeholders in the consideration of social and institutional effects of products, in addition to environmental and economic impacts, i.e. a sustainable development perspective.

Keywords: Life cycle thinking; LCM; life cycle management; LCA; life cycle assessment; ISO 14040-series; DfE; design for environment; toolbox; sustainability; communications strategies

Introduction

In the Malmö Declaration of May 31, 2000, the Ministers of Environment who gathered at the first Global Ministerial Environment Forum stated, "Our efforts must be linked to the development of cleaner and more resource efficient technologies for a life-cycle economy". This follows-up on the 1999 revision of the 'UN Guidelines for Consumer Protection' that calls on governments together with industry to take into account the environmental impacts of goods and services through their entire life cycle. To foster the international efforts for a life-cycle economy UNEP joined forces with the Society of Environmental Toxicology and Chemistry (SETAC) last year to establish the 'Life Cycle Initiative'.

The Life Cycle Initiative began by elaborating and presenting a working programme on best practice in Life Cycle Assessment (LCA). The ambitious objectives of the LCA programme focuses on further LCA progresses by developing and implementing methods and data that correspond to an identified best practice in the field. Establishing guidelines and carrying out case studies will support these progresses. It will complement the ISO framework of standards and technical reports. Altogether, the LCA programme of the Life Cycle Initiative is aiming at:

- Harmonising existing bodies of LCA knowledge and stimulating multidisciplinary scientific work under the common roof of UNEP and SETAC;
- generating peer-reviewed, easy accessible Life Cycle Inventory databases and/or information systems with data on energy and raw materials used, as well as emissions, in order to facilitate the realisation of the Life Cycle Inventory Analysis and improve the reliability of its results;
- standardising and expanding applications of the impact assessment phase through the establishment of a best available Life Cycle Impact Assessment practice with adequate methods and factors;
• ensuring that LCA can be carried out worldwide for different types of applications and presenting corresponding case studies showing the successful application of the developed best practice.

UNEP and SETAC agreed to implement subprogrammes related to LCA on Life Cycle Inventory (LCI) and on Life Cycle Impact Assessment (LCIA) in order to achieve these goals. Feedback from the private sector as well as from developing countries and the user’s community in general indicate that, in addition to the LCA programme, there is a need for a practice oriented product Life Cycle Management (LCM) Programme applicable also for small and medium-sized enterprises (SMEs), and including communication and dissemination/training plans. Inclusion of such a programme may be critical to the success of the Life Cycle Initiative. Especially, it seems that companies operating in different regions of the world would like to have an international framework in which they can develop their Life Cycle Management-related activities. This ties into UNEP’s focus on Life Cycle Thinking, which is at the very core of UNEP’s programme philosophy as a strategic conception and the global reach of their activities (UNEP 2001), which also does facilitate a more integrated approach.

Life Cycle Management has been defined by the SETAC Europe Working Group on LCM as “an integrated framework of concepts, techniques and procedures to address environmental, economic, technological and social aspects of products and organizations to achieve continuous environmental improvement from a life cycle perspective” (Hunkeler et al. 2001).

As the Life Cycle Initiative is an opportunity for UNEP to bring strategic Life Cycle Thinking to the attention of decision-makers’ worldwide, while harmonising efforts and advancing the development of tools as practical steps towards a life cycle economy, the initiative was finally called an ambitious programme on approaches and best practice for a life-cycle economy. The objective of this initiative is now, “To develop and disseminate practical approaches for evaluating the opportunities, risks, and trade-offs associated with products over their whole life cycle to achieve more sustainable products”.

This includes the generation, standardisation and integration of environmental information and approaches that facilitate Life Cycle Management activities. A further aim of this initiative is to bring Life Cycle Thinking to the attention of a global audience addressing governments, industry and organisations.

It is foreseen that after the start of the definition studies in the field of LCA, which are in preparation at the moment, the work on issues related to Life Cycle Management is to be initiated in a new programme. At the moment, UNEP and SETAC consider that the LCM programme could focus on the following key areas of interest to link Life Cycle Thinking with the environmental as well as social and economical aspects of sustainability for an adequate incorporation in management systems and a global dissemination:

1. Integration of environmental management practices, concepts and tools for supervising and decision-making in a chain management perspective on greener products and services
2. Consideration of socio-economic aspects of sustainability in a life-cycle perspective and develop set of adequate indicators for benchmarking
3. Strategies for the communication with stakeholders about life cycle product information

In the first area, it is considered that practical approaches be developed that allow a straightforward check on the environmental impacts of products and services, and that address the management of the environmental life cycle information along the product chain. The spotlight will be on flexibility, user-friendliness and applicability in SMEs and developing countries. Related to this, also the interaction and interfaces of various practices, concepts and tools to support development, procurement, production, sales and distribution of environmentally preferable products and services will be explored. The aim would be to define areas of application and to reach a certain integration of these approaches to make them consistent and to avoid contradictory results.

In the second area, an international process in which the socio-economic aspects of sustainability are more and more incorporated into a life-cycle perspective should be started. At the beginning, this work may consist of harmonising sustainability indicators developed by organisations like the UN Commission of Sustainable Development, OECD, Eurostat, EEA and others, and adapting life cycle approaches to also fulfil the requirement of developing countries. On the long-term, it would be good to promote a consistent framework of practices, concepts and tools, including a set of adequate indicators for benchmarking that allow applying the triple bottom line approach in a life cycle perspective and to incorporate this into management systems.

In the third area, the focus will be on the global relevance of Life Cycle Thinking. On the one hand, that includes communication strategies to make the (top) management of different types of companies interested in life cycle approaches by explaining them the adding value of using Life Cycle Thinking. On the other hand, it will consist of awareness campaigns aimed at consumers that are totally unfamiliar with holistic life cycle concepts to advocate sustainability. It is important to foster chain management and embedding this into product strategies and decision-making procedures. It is necessary to support capacity building in the area. Special attention will be paid to the enhancement and support of Life Cycle Thinking in SMEs and developing countries.

Clear deliverables of the LCM programme are expected to meet the target audiences’ expectations and needs. Therefore, the basis for this programme must be carefully selected. It was proposed to start the programme with open workshops to identify drivers and needs of the user community. These workshops should include the private and the public sector; also small and medium sized companies should attend. The first workshop related to these topics was organ...