Editorial: ISO 14042

ISO 14042

Environmental Management • Life Cycle Assessment • Life Cycle Impact Assessment

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The ISO standard 14042 is the third standard in the ISO 14040-series on Life Cycle Assessment which was launched six years ago by subcommittee 5 of the ISO Technical Committee 207 in order to reach an international consensus on how to carry out LCA-studies. – The ISO 14040 series includes the following standards:

14040: General principles and framework
14041: Goal and scope definition, inventory analysis
14042: Impact assessment
14043: Interpretation
14047: Examples for the application of ISO 14042 (Technical Report)
14048: Data documentation format
14049: Examples for the application of ISO 14041 (Technical Report)

The division of LCA-Methodology into successive phases was inspired by the SETAC Guidelines "Code of Practice", the most authoritative publication to be referred to.

ISO 14042 describes and gives guidance on a general framework for the Life Cycle Impact Assessment phase (LCIA) of LCA as well as its key features and inherent limitations. It specifies requirements for conducting LCIA and its relationship to other LCA phases. The standard will be supported in the near future with a technical report (ISO/TR 14047) illustrating examples on how to supply ISO 14042.

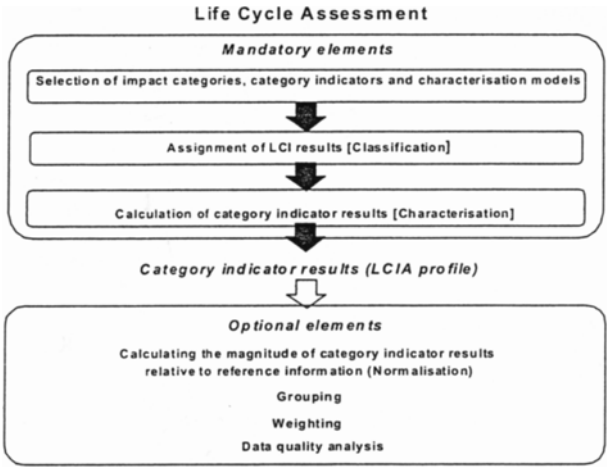
The preparation of the first working draft on LCIA started in late 1993, at a meeting in Paris. At that time there was significant concern and doubt about if it was possible to reach an international agreement and consensus about the way to conduct LCIA. The scepticism mainly focused on the lack of world-wide experience on LCIA and if there existed a common methodological basis among scientists and academia.

However, some milestones of great importance for the final success in preparing the standard passed along with the work of the working group, WG 4. One of these milestones had to do with the successful and very much appreciated recruiting of LCA experts from SETAC in joining the working group. Without the dedicated efforts from many of these persons, the standard would never had become reality.

Another milestone was the growing awareness among many delegates in TC 207 of the usefulness of LCA as a methodological tool for the continuous process in identifying environmental aspects within the framework of environmental management systems according to ISO 14001. Environmental management systems tend to gradually take more product-oriented issues on board, and therefore the need for scientific and internationally agreed-upon methods focusing on products and services is evident.

There were two somewhat more problematic issues to overcome within WG 4. One of them dealt with the question to what extent the standard could give guidance to use a set of scientifically valid characterisation factors as basis for converting data from the Inventory Analysis to the so-called impact categories. In the first round of the discussions in the working group it seemed that only the factors for Global Warming Potential (GWP) and stratospheric Ozone Depletion (ODP) could be accepted. Later on, however, WG 4 thought this too restrictive and agreed that also other characterisation factors should be used. This was an important step forward to allow LCA studies to convey a more holistic view on potential environmental impacts for a fairly comprehensive set of impact categories.

The other "problematic" issue was the most controversial one – the use of the valuation step as part of the LCIA-Methodology. At the beginning of the standardisation work it was not clear whether valuation (later on referred to as "weighting") should be included in the Impact Assessment or the Interpretation phase. In the final ISO 14042 standard, weighting is an optional element to be used separately to better understand the ecological consequences of results from the Inventory Analysis and, furthermore, as an input to the Interpretation phase. In any case, weighting shall not be used for comparative assertions.



The work to prepare the ISO standard on Life Cycle Impact Assessment has been very interesting and inspiring, even though there were many doubts during the first years whether it would be possible to finalise the work. Of decisive importance for the success in preparing the standard was the friendship and good spirit among all the members in the working group – something that became more evident during the last years of the work. Another aspect of vital importance for the successful outcome of the work in WG 4 was the excellent support and efficient administrative work in the international secretariat co-ordinated by Leena Ebefors at the Swedish Materials- and Mechanics Standards, SMS.

LCA is gradually becoming more and more internationally recognised as an important environmental management tool. According to ISO 14040, an LCA shall include LCIA to help identify potential environmental problems associated with various man-made activities. To be able to successfully manage environmental problems, you must know the magnitude of the environmental problems. Hopefully, ISO 14042 will provide the guidance needed to plan, do, control and improve all kinds of management efforts to safe-guard the worlds environments.