

Evaluation of Two Simplified Life Cycle Assessment Methods

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A simplified LCA is as a simplified variety of detailed LCA conducted according to guidelines not in full compliance with the ISO 1404X standards and representative of studies typically requiring from 1 to 20 person-days of work. It can be qualitative, quantitative or semi-quantitative. Two methods for simplified LCA have been evaluated: the SLCA-method (presented by Graedel and Allenby) and the MECO-method (presented by Pommer et al). The methods were chosen since they are well documented and fundamentally different.

The methods were used in a case study on electric cars and the results were compared with the results from a traditional quantitative LCA. The evaluation also included the field of application, the level of arbitrariness, the flexibility and easiness of the method, the use of weighing method and also the possibilities to include qualitative information, toxicity, land use and production of consumables.

The usefulness of simplified LCA-methods, generally and in relation to their suitability in a purchasing process, is discussed. Choosing a simplified LCA-method involves a balance between the simplification of the method and the type of results the user is looking for. There is no method that is preferable over all others under all conditions. In a comparison of two simplified LCA-methods, two of the most important criteria are the field of application and whether the method can deliver the required information.

The evaluation shows that the MECO method has some positive qualities compared to the SLCA-method and that a simplified and semi-quantitative LCA (such as the MECO-method) can provide information that is complementary to a traditional quantitative LCA. The concluding suggestion is a procedure where a simplified LCA is used both as a pre-study to a traditional quantitative LCA and as a parallel assessment, which is used together with the traditional LCA in the interpretation.