



“CLEANER PRODUCTION INITIATIVES AND CHALLENGES FOR A SUSTAINABLE WORLD”

Life Cycle Assessment (LCA): Discussion on Full-Scale and Simplified Assessments to Support the Product Development Process

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Abstract

The environmental impacts observed throughout a product life cycle are, to a large extent, determined during its development phase, especially on the initial stages of product development process. These stages are characterized by a high level of uncertainty, environmental performance improvement potential and by the unavailability of quantitative and detailed data of the product for performing full-scale LCAs, since it is still under development. Companies are more than ever recognizing the need for adopting a systemic view of the environmental impacts in the first stages of product development but, the complexity and slowness of full-scale LCA studies coupled with the lack of technical expertise of the designers to apply LCA, prevents the use of the results in the decision making process of product development. In order to overcome this problem, a large amount of ecodesign practitioners and academics has developed simplified methods and tools to assess the environmental impacts in the product life cycle. In this context, the main goal of this study is to discuss the use of full-scale and simplified LCA in product development process context and present an overview of the so called simplified LCA, obtained during a systematic literature review on ecodesign methods and tools.

Keywords: *Life Cycle Assessment (LCA), Simplified Life Cycle Assessment (S-LCA), Ecodesign, Product Development Process (PDP).*
