P-Glossary

Life Cycle Assessment

Life cycle assessment (LCA) is the process of evaluating the effects that a product has on the environment over its entire life. LCA provides objective answers and suggests more sustainable forms of production and consumption. It uses a scientific approach in which the quantification of effects plays a dominant role. A complete LCA is composed of three separate but interrelated components:

- Life cycle inventory is an objective process of identifying and quantifying the environmental loads involved, i.e., the energy and raw materials used and the emissions and waste consequently released (air emissions, liquid effluents, solid waste) throughout the life cycle of a product, process, or activity. Life cycle impact analysis is a technical quantitative and/or qualitative process to characterize and assess the effects of the environmental load identified in the inventory component. The assessment should address both ecological and human health considerations as well as such other effects as habitat modification and noise pollution.
- Life cycle improvement analysis is a systematic evaluation of the needs and opportunities to reduce the environmental burden associated with energy and raw material use and environmental releases throughout the whole life cycle of the product, process, or activity. This analysis may include both quantitative measures of improvement such as changes in product, process, and activity design; raw material use; industrial processing; consumer use; and waste management.

See also: Green Purchasing