Environmental Technology

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Abstract

This paper is a case presentation of Life Cycle Assessment as one of the means of environmental sustainability in industrialization. The introductory section of this work presents a conceptual definition of LCA while the second section describes the role of Sustainable Minds enhancing environmental sustainability. The next sections of this work evaluate the effectiveness of LCA and reveal the significance of Computer Aided Designs in LCA.

Environmental Technology: Case Analysis

## Introduction

Industrialization and expansion of business activities emerged as some of the ways through which human activities interfere with nature and the environment. As a result of this, several industries showed initiative to promote environmental awareness and design policies that would minimize depletion of natural resources and environmental degradation. Companies are therefore compelled to evaluate their performance not only from the perspective of material returns but also taking into consideration the effect of their products on the environment. Life Cycle Assessment emerged as one of the ways through which this is enhanced in an industrial system. LCA in this case refers to a policy of environmental consciousness in industrialization that takes into account the effects of the entire process of industrialization, from extraction of raw materials to final disposal of waste products (Curran, 2006).

## Sustainable Minds

Sustainable Minds are empowerment institutions that advocate for the implementation of Life Cycle Assessment in the mainstream industries. Their main mission is to partner industrial investors in training, equipping and creating awareness on environmental sustainability to all industrial stakeholders (Sustainable Minds, 2000). They achieve this by training investors on software designs such as Autodesk Inventor which help the engineers and designers to address challenging environmental issues. Through digital prototyping, manufacturers are able to explore a complete product before it is actually launched. As a result of this, they find it possible to optimize usage of materials, minimize wastes and make environmental sustainable designs at the initial stage of planning (Sustainable Minds, 2000).

## The Effectiveness of Life Cycle Assessment

Although Life Cycle Assessment is the most famous evaluation design and management tool for comprehensive sustainable system, it has been perceived as less effective due to a number of factors**.** To begin with, its standard operating procedure is not institutionalized, hence creating a technicality of universal application and evaluation. On the other hand, the process is perceived as long, tedious, and time-consuming; it requires a lot of resources that many companies are not ready

to part with. Inaccuracy as well as unavailability of data may also hinder and distort the validity of the findings (Curran, 2006).

However, LCA is also associated with a number of benefits if it is well performed. For instance, it enhances responsible use and reuse of industrial products and also limits transfer of environmental problems from one place to another. Furthermore, developers can also easily assess the environmental, health and ecological consequences of their products and make specific choices that will reduce harm to nature and humanity (Curran, 2006).

In the process of implementation of conscious environmental development, many consumers often confuse the concepts of sustainability and "*green*". An effective implementation of LCA is vital for clarifying this confusion. Green consciousness only considers the impact of industrialization on the vegetable kingdom while sustainability considers a wider scope, such as human, health, chemical, economic and ecological effects of industrialization. Green consciousness is therefore part of but not the whole concept of sustainable development (Curran, 2006).

Finally, LCA technology has further been improved through its incorporation in Computer Aided Designs**.** Through this, an environmental evaluation software tool is created which contains the parametric models of the industry. The tool then delivers a detailed environmental profile of each part of the industry and compares the LCA results with others. After that, a more convenient choice can be made (SolidWorks Resource Center, 2000).

## Conclusion

In conclusion, Life Cycle Assessment has remained the most effective design to evaluate the environmental consequences of industrialization. Although it is associated with a number of limitations that cause inaccuracy and inefficiency, the incorporation of Computer Aided Designs has made it more appropriate.

References

Curran, M. A. (2006). *Life Cycle Assessment: Principles and Practice: Scientific Applications International Corporation (SAIC)*. Retrieved from: http://www.epa.gov/nrmrl/std/lca/pdfs/chapter1_frontmatter_lca101.pdf

SolidWorks Resource Center. (2000). *SolidWorks*. Retrieved from http://www.solidworks.com/sw/resources/solidworks-tutorials.htm

*Sustainable Minds*. (2013). Retrieved from http://www.sustainableminds.com/