World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:10, No:02, 2016

Life Cycle Assessment: Drinking Glass Systems

Authors : Devina Jain

Abstract : The choice between single-use drinking glasses and reusable glasses is of major concern to our lifestyles, and hence, the environment. This study is aimed at comparing three systems - a disposable paper cup, a disposable cup and a reusable stainless steel cup or glass - with respect to their effect on the environment to find out which one is more advantageous for reducing the impact on the environment. Life Cycle Assessment was conducted using modeling software, Umberto NXT Universal (Version 7.1). For the purpose of this study, the cradle to grave approach was considered. Results showed that cleaning is of a very strong influence on the environmental burden by these drinking systems, with a contribution of up to 90 to 100%. Thus, the burden is determined by the way in which the utensils are washed, and how much water is consumed. It maybe seems like a small, insignificant daily practice. In the short term, it would seem that paper and plastic cups are a better idea, since they are easy to acquire and do not need to be stored, but in the long run, we can say that steel cups will have less of an environmental impact. However, if the frequency of use and the number of glasses employed per use are of significance to decide the appropriateness of the usage, it is better to use disposable cups and glasses.

Keywords : disposable glass, life cycle assessment, paper, plastic, reusable glass, stainless steel
Conference Title : ICSP 2016 : International Conference on Sustainable Production
Conference Location : Paris, France
Conference Dates : February 22-23, 2016