

Invited paper

Environmental footprint of ICT equipment in manufacture, use and end of life

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Abstract

Generating environmental profiles or CO2 footprints of electronic products need Life Cycle Assessment (LCA) data from resource extraction, manufacture, transports, use and End of Life. To start collection those data individually from scratch never will provide results within a reasonable time frame. The presentation will show the approach using generic data to create electronic product specific CO2 footprints in practical time horizons.

Extended Abstract

Environmental concerns and the demand on green IT force companies and their supply chain to care for environmental profiles of products and require continual environmental improvement of products. Companies' focus must be the investigation into design of products and assessments of environmental impacts of all product life cycle phases, i.e. manufacture, transports, use and End of Life (EoL). As the design defines the behaviour and performance of a product, which is always related to the environmental impacts at all life cycle phases, the electronics industry needs significant improvement in communication throughout its supply chain. The design of electronics is a very complex issue and even technologically there is not lived in day to day work a sufficient system approach, able to detect and develop enough improvements.

Against this background the presentation presents the approach to apply representative LCA models of parts and components of electronic products in order to derive and setup environmental profiles of the manufacture phase of ICT equipment. In addition with investigations into the transport, use and EoL phase, the gained environmental profiles allow detection of hot spots in between and within any of these life cycle phases. Further investigation at found hot spots allow then a supply chain individual specification of environmental profiles and avoids getting lost into too many data acquisitions from thousands of suppliers without providing any result.

At the same time it shows the business advantages of companies from OEM to suppliers' perspective, if they adopt ecodesign not as an additional burden, but if they use it as a management tool enabling the detection of improvement potentials. The author sees ecodesign not as a tool only for environmental improvement, it is much more a new language enabling and fostering best efficient communication throughout the entire supply chain, which leads logically into cheaper and better products – from technology, cost and environmental perspective.

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CV

Dr. Herrmann works as project manager at PE International GmbH since 2004. At PE, known as experts in sustainability, he is senior consultant and responsible for the field of electronics. Dr. Herrmann finished his PhD, subject was LCA modelling and end of life assessment of electronic products and wastes, at the department of Life Cycle Engineering of the IKP at University of Stuttgart in 2003. There he worked and developed the subject of Life Cycle Assessment and ecodesign of electronics from 1998. His ten year experience makes him to an environmental expert in the field of electronics processes, products and systems, which is enlarged from experiences at automotive industry, building industry and recycling industry as well as fields of metals, plastics, renewable resources and energy provisions.