

Metals LCA: Methodological Problems and Practical Solutions

Scott R. Baker

International Copper Association, 260 Madison Avenue 16th Floor, New York, NY 10016 TEL 01-212-251-7240, FAX 01-212-251-7245, sbaker@copper.org

The copper industry is engaged in cradle to cradle life cycle assessments for specific copper product applications in specific geographic regions. This includes cradle-to-gate life cycle inventories that have already been prepared in the US and Europe and a comparative LCA that has been prepared for residential copper tube and plastic pipe in the US. Along the way, several obstacles were encountered that required changes in strategy and design of the LCA. Several of these changes were specific methodological improvements to reduce the ambiguities in source databases and uncertainties in LCA analyses.

These improvements will be described, with broader recommendations for improvements to LCA methodology in general for downstream product applications involving metals. Linking LCA-based outcomes (quantification of energy input/output balances and their impacts on pollution indices) and risk-based outcomes (estimation of health and ecological risks) in DfE decision-making regarding materials selection will be discussed. Other nonferrous metal industry sectors have produced LCIs (nickel) and LCAs (lead battery). This presentation will describe the experiences of the nonferrous metals industry in developing LCIs and LCAs, and the present interim outcome of the copper LCA — still a work in progress. Future plans for further development of copper-based LCA and recycling activities will also be described in the context of product stewardship goals of the copper industry and their coordination with global activities in LCA guideline development (the UNEP-SETAC initiative) and recycling database developments.