

Abstract submitted to the 5th NorLCA Symposium Global Sustainability Challenges - Northern Approaches; 2 – 3 October 2014 in Reykjavik, Iceland

Abstract Title: Life cycle assessment and eco-design in a day: Finnish lessons from a series of LCA clinics for start-ups and SMEs

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Abstract:

Life cycle assessment (LCA) has become one of the main tools for quantifying environmental sustainability. Due to its complexity, however, it is rather costly, thus in Finland mostly applied only by the larger companies. Yet, over 90% of all companies in Finland consist of less than 10 people and start-ups emerge daily. Should life cycle thinking (LCT) proliferate even to the smallest enterprises, there clearly is a need for an affordable solution.

The aim of this study was to develop and test a low-cost and fundamentally simplified LCA concept, making it affordable for small enterprises to employ LCT, in particular during the product design stage. In this conference paper we present the concept of LCA clinics with its innovative aspects, as well as its limitations.

The concept can be described as life cycle brainstorming within boundaries defined by the ILCD handbook. It is a collaborative process between a pair of LCA experts and company stakeholders. The main innovation is that a clinic requires less than 8 hours of stakeholders' time, and only two working days of the practitioners. The extremely short time translates into unrivalled cost, compared to a more traditional LCA. In order to accelerate the process, and to maintain the quality, we have developed an ILCD-based step-by-step protocol helping the practitioners to keep to the main objectives. In the clinics we strive to communicate not only environmental footprints of the analyzed products but also their potential handprints and eco-design.

We have tested the concept in a series of trials and conclude that it can be successful implemented, but must be further unified. The short required time not only brings the costs down but also poses new challenges on how uncertainties are treated and system boundaries defined, and on how to communicate results and recommendations in a comprehensible fashion.

Keywords (4 max): simplified LCA, SME, ILCD, low-cost