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Deliverable D1.2

Methodology concept for LCA support of SMEs

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Executive Summary

The goal of this Deliverable is to develop methodological concepts on environmental assessment for the respective sectors according to the needs assessment carried out in D1.1. To get well-grounded results the latest developments in environmental legislation and standardisation and the requirements from environmental perspective are taken into account. The results of this deliverable will form the basis for the detailed operating methods (WP2) and the webtools (WP3). Methodological concepts including key environmental aspect, assessment method, environmental communication instrument, etc., were developed for each sector.

In the bio-plastic sector GWP indicators have been selected as the main environmental impact category. This was was required by the manufacturers and clearly shows the advantages when making comparisons to oil-base plastics. The tool for industrial machines clearly should focus on energy consumption in the use phase, as this is the most relevant environmental impact. Therefore a method for providing an energy efficiency index should be developed. Similarly in the electronic sector energy consumption in the use phase is of main importance. Accordingly the webtool should focus on energy savings over the life cycle of the products. As a communication instrument a product carbon footprint is planned. Due to requests of industry and (Taiwanese) legislation the same instrument should be used for the semiconductor sector whereas electricity in the production phase could be identified as main source of GHG emissions. Both the case studies and the needs assessment show that within PCBs, as parts of electronic products, the largest environmental impacts occur during the production phase. There major environmental indicators are energy, water consumption and the production waste. Therefore, these factors should be included in the assessment webtool. In the renewable energy sector, especially in photovoltaic companies there is significant interest in introducing environmental labelling in order to green the industries' image. Possible concepts could be the assessment of energy (and carbon) payback times (EBPT) or net energy gain (NEG). The (positive) environmental impact of sensors is mainly due to their energy savings during the use within other products. The main indicators will be energy and global warming potential. The products within the smart textiles sector are in very early stage of development. According to the case studies the environmental assessment approaches should focus on energy consumption or energy saving potential and secondly also on materials.

Further steps in the project will include the development of operating methods and the development of the webtools themselves. Data collection and the sector specific design of simplified but meaningful environmental assessment methods are seen as next major challenges.