



Smart Textiles

Case study

Grado Zero Espace s.r.l. (Italy)



Grado Zero Espace s.r.l. is an Italian research, consulting and prototyping company in the field of smart materials innovation. GZE is positioned as a connector between different industrial sectors and pure research entities (universities, testing laboratories, space agencies, inventors and researchers). The firm is specialized in technology transfer from the research stage into products for normal daily use. They have rich experiences in the adoption of more efficient and innovative industrial assembly processes in order to improve the performances of chosen materials. They also offer design services, consulting, prototyping, engineering, and production processes' definition in the high-tech market sector, such as aerospace or medical-surgical products.

Ms. Dammacco is the lead product designer at GZE. Her previous experiences with environmental aspects include eco-design and eco-efficiency. She had no experiences with LCA before but she has been aware of a variety of environmental assessment tools, such as MET matrix, Ecodesign PILOT, and GaBi. One of the main problems encountered was that their products have not yet run through a complete life cycle. Usually, data needed for LCA are missing at the early stage of design and innovation for new technologies. Ms. Dammacco indicated that the company is interested in improving the environmental product quality and legal compliance. In future, they may also need to meet new eco-label requirements for smart textiles because of increasing environmental awareness of customers as well as environmental legislations and regulations. They expect growing clients demand for information of the material inventory (bill of materials) and eco-benchmarking.

GZE has previously expressed interest in LCA training and also participated in the SME survey (part of WP1). She was contacted via e-mail and the LCA introduction and training was done remotely in form of several phone or Skype sessions. The training started with a step-by-step introduction to the beta version of the LCA to go tool. Then, the tool was used to analyse a bio-composite material. The goal was to generate an environmental benchmark of the product for internal decision-making. During the tool application, the company experienced several times that the type of materials, which is able to analyse, is not huge. They missed a more detailed possibility to analyse the manufacturing process, such as a simulation of a production plant. A very useful action is that the tool can export a summary report as xls file. The company is interested to be informed about the final release version of LCA to go tool.

Ms. Dammacco said: “We we found it a very very interesting tool especially for a preliminary quick overview and analysis”.



Figure 1: LCA results for the bio-composite material (details)

	Euro total life-time	Euro per year
TOTAL	91	2
MATERIALS	48	1
- Materials	48	1
Kenaf fibre from India	4	0
Jute fibres from India	5	0
Yarn, cotton	39	1
MANUFACTURING	36	1
- Energy	1	0
Electricity 230V (UCTE)	1	0
- Processes	35	1
weaving 200 dtex	35	1
DISTRIBUTION	1	0
- Packaging	1	0
Corrugated board	1	0
- Transport	0	0
Air traffic continental	0	0
USE	6	0
- Energy consumption	6	0
Electricity 230V (UCTE)	6	0
- Consumables	0	0
END-OF-LIFE	0	0
- Recycling	0	0

Figure 2: LCA results for the bio-composite material (overview)

