

# Bio-based plastics

## Case study

### Scanfill AB



Scanfill AB is a Swedish company specialized in the production of efficient and sustainable plastic packaging materials based on mineral fillers. Scanfill AB has decided to use the LCA to go tool in order to improve their knowledge about LCA and the impact of new compounding products. The final aim was to search for strategies for environmental improvement of their current compounding portfolio.

Because of their interest on such analysis, Scanfill AB decided to join the training and case study programme of LCA to go with the support of ITENE. The main driver to join this training was basically their interest on learning more about the life cycle impacts of the use of mineral fillers in the compounding of plastics.

In this case study developed with Scanfill, the bio-based plastics LCA to go tool was used to carry out a cradle-to-gate LCA of five different types of 0.18 oz pods for premium-quality coffee produced by one Scanfill's customer, including those made of SCANFILL compound. SCANFILL is an innovative material, which is 50% mineral and only contains 50% polymer. SCANFILL is approved for direct contact with food. The following systems were analysed: (a) SCANFILL PP coffee pod (thermoformed), (b) SCANFILL PP/EVOH coffee pod (thermoformed), (c) PP coffee pod (injection moulded); (d) PP/EVOH coffee pod (thermoformed); (e) PLA coffee pod (thermoformed) with multilayered PP/aluminium bag.

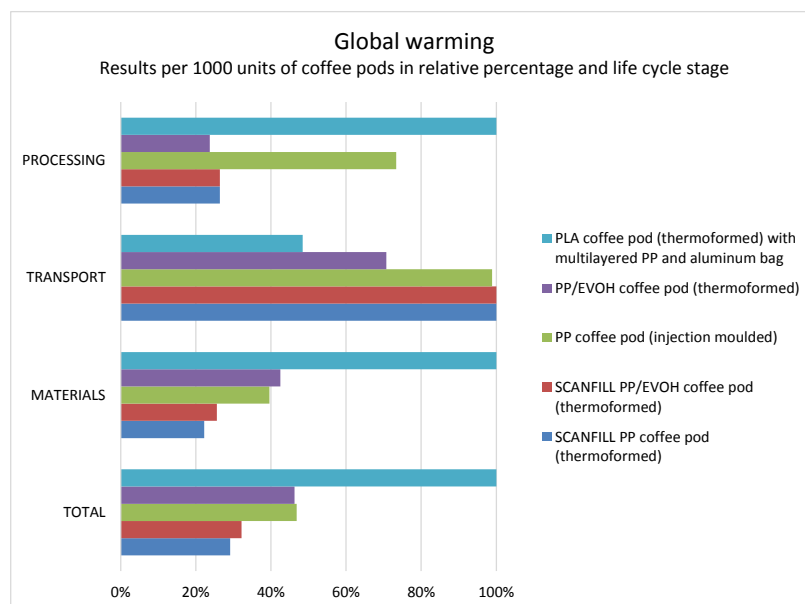


Figure 1. Global Warming results in relative percentage and by life cycle stage for 1000 units of coffee pods

A first screening cradle-to-gate LCA with the tool shows that SCANFILL pods have less impact than the other systems examined. The alternative in PLA have the biggest impacts mainly due to the need of a multilayer PP/Aluminium bag. The reason is that pods have to protect the coffee against oxygen to prevent

oxidation and to keep the aroma, so in the case of PLA pods a barrier bag is necessary. Results show that the reduced use of polymer in SCANFILL coffee pods allow to minimize the carbon footprint.

Karl Banke, from Technical Support Department at Scanfill AB pointed out that *“working with LCA to go tool has been a great experience to learn more about the environmental behaviour of our products. Outcomes from the tool have allowed us to find strategies for further environmental improvement of our product compounding portfolio”*.

