

Bio-based oleochemicals used as lubricant additives – renewable counterpart to fossil-based products and comparative LCA

In the presentation we will first show different bio-based alternatives for the lubricant industry as renewable counterparts for today's fossil-based products. We will then present details of the peer-reviewed comparative LCA.

The assessed products were the following:

LIGALUB 19 TMP is a polyol ester with a bio-based carbon content above 80% used for lubricant applications and produced by Peter Greven, a leading manufacturer of oleochemical products based on renewable raw materials. Conventional lubricant esters based on petrochemical feedstocks such as diisotridecyladipate (DITA) can be considered as direct counterpart for LIGALUB 19 TMP.

We present a peer-reviewed LCA study that assesses, among other environmental aspects, the carbon footprint of a product mainly made from renewable carbon vs. a fossil-based product to help answer the question whether materials and products derived from renewable carbon reduce greenhouse gas emissions when compared to the established fossil-based counterparts.

The study was carried out following the LCA standards laid out in ISO 14040 and ISO 14044. External critical review as described in the standards has been performed by a review panel consisting of three independent reviewers. This LCA covers all relevant life cycle stages from cradle-to-gate, which means from the supply of raw materials to the manufacturing of the products.