

## Meta analysis of Chemical Recycling LCAs

*Carolin Deregowski, BASF*

As chemical recycling has become a complementary option to mechanical recycling of plastic waste, a growing number of studies on life-cycle assessment (LCA) of chemical recycling has been conducted in the last years, providing transparency about the environmental impact of the technology. We wanted to know: Which research findings can be confirmed through the comparison of different LCA studies and where do differences come from?

To find answers to these questions, Sphera conducted a meta study analysis of multiple chemical recycling LCAs on behalf of BASF. The body of literature included LCA studies from different regions as well as from scientific institutions or industry publications since 2013. The study focused on pyrolysis technologies with mixed plastic waste as feedstock. The meta study assessment analyzed the publications according to system boundaries, assumptions, methodological approach and outcome. In the presentation, we will provide an overview of the results and recommendations that can be derived.

**Key words:** Life-cycle assessment, chemical recycling, pyrolysis, eco-efficiency, carbon footprint