Particulate Matter Formation

This chapter deals with the causes and consequences of exposure from emissions of primary particles and secondary particle precursors on human health and how to deal with them in life cycle impact assessment (LCIA). Following a short introduction and literature review, the first part outlines the complete emission-to-damage pathway, from emissions of primary particles and secondary particle precursors to damage on human health, so called ‘respiratory effects from particles’. It describes the assessment framework for quantifying respiratory effects from particles in the context of LCIA. The second part provides an overview of methods that have been available in LCA to address impact of particles on human health. We finally discuss variability and main sources of uncertainties, as well as future trends in modelling respiratory effects of particles in LCIA.