Greenhouse gas reductions through enhanced use of residues in the life cycle of Malaysian palm oil derived biodiesel - DTU Orbit (30/12/2018)

This study identifies the potential greenhouse gas (GHG) reductions, which can be achieved by optimizing the use of residues in the life cycle of palm oil derived biodiesel. This is done through compilation of data on existing and prospective treatment technologies as well as practical experiments on methane potentials from empty fruit bunches. Methane capture from the anaerobic digestion of palm oil mill effluent was found to result in the highest GHG reductions. Among the solid residues, energy extraction from shells was found to constitute the biggest GHG savings per ton of residue, whereas energy extraction from empty fruit bunches was found to be the most significant in the biodiesel production life cycle. All the studied waste treatment technologies performed significantly better than the conventional practices and with dedicated efforts of optimized use in the palm oil industry, the production of palm oil derived biodiesel can be almost carbon neutral.