Exploring the value chain of Miscanthus based products from LCA perspective

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Souhrn

In the framework of the MiscanValue CORNET project, various strategies for Miscanthus x giganteus cultivation and biomass processing have been studied. Besides conversion to energy, Miscanthus biomass can be converted to bio-based products such as insulation materials, pulp, paper or packaging products. In particular, the goal here was to test circular solutions for manufacturing Miscanthus based products and identify the most economically viable and at the same time the least environmentally impactful opportunities. Through an outlook on the Miscanhus x giganteus value chain, this work presents the environmental impacts of Miscanthus cultivation, biomass storage and processing obtained using Life Cycle Assessment. It also highlights the environmental benefits linked to phytoremediation in the case of cultivating Miscanthus on marginal lands. Various scenarios have been modelled and assessed by GaBi software using the EF 3.0 methodology. This project also aims to directly apply its findings into practice through contacts with small and medium enterprises in a collective effort to bring more circular solutions into larger-scale production.