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Efficiency of biomass energy use– Approach for the determination of the efficiency of diverse bioenergy projects

Diana Pfeiffer and Daniela Thrän

Deutsches Biomasseforschungszentrum gemeinnützige GmbH, Germany

The provision of bioenergy is a function of highly complex supply chains and networks, thus multidisciplinary research is required to support and advance its provision. During the last five years the German funding programme “Optimization of the Use of Biomass for Energy Production” (in short “Biomass energy use”) has supported 90 different research projects on cost-effective and sustainable bioenergy provision. There are a multitude of assessment approaches to ascertain the efficiency of a large range of bioenergy conversion technologies as well as advancing bioenergy concepts. Therefore, there is a serious need for harmonization and standardization of such methods in order to assure transparently the role of bioenergy in meeting the goals of the energy transition process. To enable the different projects to assess the related costs more effectively, as well as the GHG emission reduction potential, a method handbook has been developed. This handbook provides guidelines, checklists, calculation methods, reference data for different biomass conversion processes (combustion, gasification and biogas production), provision costs (economic assessment), biomass potentials, energy balances, as well as GHG balances. The developed method handbook considers itself as a compromise between different researchers to improve the assessment quality and the findings for bioenergy research projects in the programme “Biomass energy use”. It has also been used by research projects outside the programme and furthermore has the potential to support research activities on a European level. However, the approaches and calculation procedures listed in the method handbook are a crucial starting point for which further developments can be developed upon, both for scientifically and practical applications. The presentation will give an overview on the results of the process to provide approaches for harmonized and transparent methods used by the diverse projects within the funding programme to determine the efficiency of their technology, thus contributing to the future standardization of assessment methods.

Biography

Diana Pfeiffer has been working at the Deutsches Biomasseforschungszentrum gemeinnützige GmbH (DBFZ), Germany since 2009 as Project Coordinator of the programme “Promoting projects to optimise biomass energy use”. Before joining DBFZ, she was a Consultant in the Management & Audit Services (MAS) Audit Team within ERM based in Frankfurt/Main, Germany and in the Forestry section of the UN Food & Agriculture Organization/Sub-regional Office in Budapest (Hungary). She holds a University degree in Geo-Ecology (Earth System Sciences).

Diana.Pfeiffer@dbfz.de

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