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## Biofuels between manifold expectations: How to assess their potential for sustainable transportation?

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**B** iofuels have been introduced 25 years ago and show constant increase globally. Today many biofuel technologies and concepts are developed and discussed to supply different transport sectors. They differ in feedstock, conversion technologies, levels of development, product quality and availability on the market as well. In 2016, the global market volume contained 2,086 PJ of bioethanol (from sugar and starch), 926 PJ of biodiesel and 177 PJ of HVO. Additionally biomethane, DME and MeOH and bioethanol from lignocellulosic materials are currently introduced into the market. Most biofuels are used in road transport sector. In parallel there is an intensive debate on relevant sustainability dimensions for the assessment of biofuels in general (i.e., GBEP, RED etc.) and it is well known, that the frame condition from support schemes, the specific demand from different transport sectors (road, ship, aviation) and the development of feedstock markets will influence the future feasibility substantially. With regard to those expectations, the assessment of the potential for current and future biofuel provision concepts has to consider different possible futures, which will be figured in a scenario approach. Based on defined expectations and framework conditions each scenario different biofuel concepts are analyzed, in particular with respect to their technical performance, potential for greenhouse gas emission reduction and their market potentials considering different prices for feedstock, energy and carbon certificates. Finally, we will provide the relevant driver for market implementation of the different biofuels for both, the short term perspective till 2020 and for the longer term

## Biography

Prof. Daniela Thrän studied environmental engineering at the Technical University of Berlin. After completion, she obtained her PhD at the University of Weimar, Germany. Daniela Thrän is an accomplished researcher, having held positions at both the University of Potsdam and Stuttgart. In 2003, she became the Department Head of "Bioenergy Systems" at DBFZ - Deutsches Biomasseforschungszentrum gGmbH (former: IE Leipzig gGmbH). In 2011 she also took the lead of the newly established department "Bioenergy" at the Helmholtz Centre for Environmental Research GmbH (UFZ). Professor Thrän is currently leading a multidisciplinary team of about 50 scientists, working in a broad spectrum of interests, investigating different national and international research projects focusing on areas of; biomass potentials, bioenergy pathways and their assessment, standardisation of solid biofuels material flow management and sustainability assessment. She is the author of more than 100 publications in the bioenergy sector.

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