Project Fact Sheet

Project Title: Agricultural Residual and Waste Material Utilization - Approaches to the Technical Adaptation of Existing Biogas Plants for the Utilization of Fibrous Residual Materials (LaRA)

Keywords: Biogas Production, Agriculture, Organic Waste and Residues, Optimisation, Recommendation for Action, Guideline

Project Details

Project Start: 2019
Grant Scheme: Nachwachsende Rohstoffe (FNR)
Funding Authority: BMEL
Project Budget: 370,072.02 €
Project Leader: Prof. Dr.-Ing. Wilfried Zörner
Contact Person: Katharina Bär
Project ID: 22042218

Description

The overall objective of the joint project is to develop solutions for creating optimal process and plant engineering conditions for the utilization of fibre-containing residual and waste materials in agricultural biogas plants. The investigations and subsequent conceptual design as well as economic and social aspects are examines in addition to the consideration of process and plant engineering issues.

A changeover to the use of residual and waste materials and the associated changes in substrate properties, such as rheology, substrate digestion, temperature distribution in the tanks and the wear behaviour of the components can have a significant impact on the plant peripherals (feeding, agitator, pumping system, etc.). The definition of a valid catalogue of measures for the successful adaptation of the plant technology requires a comprehensive consideration along the process chain of biogas production.

In addition to the adaptive dimensioning of the plant components, alternative approaches, such as the use of innovative pre-treatment technologies for efficient digestion to increase the degradability of substrates that are difficult to digest, are being investigated.

In terms of an overall evaluation of a conversion to residual and waste material utilization of the biogas plants, economic factors such as agricultural land management, reduced substrate costs and increased independence from crop yields are taken into account in the investigations.