Project Fact Sheet

Technische Hochschule Ingolstadt
Institute of new Energy Systems

Project Title	**The digitalised farm in the energy system for the future - Development of technical solutions and business models based on AI-based digital electricity meters to increase resource efficiency in agriculture (FarmErgy)**
Keywords	**AI, dairy farm, pig fattening, energy, agriculture, energy management**

Project Details

Project Start	2021	**Duration**	2.5 Years
Grant Scheme	Research for innovation in the agricultural sector	**Project ID**	
Funding Authority	Landwirtschaftliche Rentenbank		
Project Budget	531.287,36 €		
Project Leader	Prof. Dr.-Ing. Markus Goldbrunner		
Contact Person	Dr. Christoph Trinkl		
Project Partners	Bundesverband der Maschinenringe e.V., Steinbacher-Consult Ingenieurgesellschaft mbH & Co. KG		

Description

The project objective is the development of technological approaches for the value-added and resource-optimised embedding of agricultural businesses in the advancing digitalisation of the energy transition in rural areas using artificial intelligence methods. The following work objectives are formulated for this purpose

- Development of a NILM algorithm for identifying selected electrical consumers on farms based on the device-specific power signature.
- Development and testing of technical solutions for the concrete utilisation of the technology in the agricultural sector.
- Development of viable business models to tap cost and resource saving potentials and revenue options for farms.

The processes prevailing in dairy and pig fattening farms are to be automated and optimised in terms of energy, and the results developed are to be implemented on a pilot farm. The control concepts and business models developed should also be suitable for broad application under economic conditions for dairy and pig farms and thus have model character. In this way, with the help of the developed algorithms and the results based on them, the performance of the agricultural industry can be optimised in terms of energy and the use of resources in agriculture can also be guaranteed in the future in a sustainable manner.