

Project description

Joint BMBF project: Elimination of technical, legal and economic restraints for the feed-in of biogenous gases into the gas network with the aim of reducing climate relevant emissions by means of developing and applying a georeferenced database – strategy development for the political and techno-economic realization (short title: biogas feed-in)

The utilization of biomass is increasingly gaining in importance due to receding fossil resources, commitments concerning climate protection, need for security of supply and a necessary diversification in energy supply. One major problem is the integration of biomass into existing energy systems.

The accumulation of biomass is distributed over vast spaces and the utilization is usually restricted to local the generation of energy. Especially biogas production has up to now been characterized by a mainly local utilization of agricultural residues, e. g. liquid manure. The consequences are: small, uneconomic plants induce costs that are not balanced by economic benefits; existing biomass potentials are not fully exploited, and waste heat can hardly be used which leads to low energy efficiency ratios.

Thus, the central objective of the joint project »biogas feed-in« is to extend the possibilities for the energetic utilization of biomass by overcoming restraints in the generation, conditioning, feed-in and distribution of biogas via the gas network. Extending the utilization of biogas onto the transportation sector and combined heat-/power generation could help to achieve higher emission reductions compared to the currently practiced local power generation at biogas plants. This way, substantial potential for climate protection could be opened up.

The distribution of conditioned biogas (bio natural gas) via the nationwide gas network offers a number of advantages: local disparities in demand could be overcome; the bio natural gas could be used with a high efficiency in modern combined heat-power-(cold-)plants; new ways of utilization could be found – especially in the transportation sector and in the field of private households.

Although the technical requirements for processing and feed-in of biogas into the gas network can mainly be met the realization is impeded by logistic, administrative, legal and other matters. Thus, it is the main objective of the joint project »biogas feed-in« to identify concrete restraints and develop solutions which help in overcoming them.

A central part of the project is the development of a geographical information system (space-oriented and non-space-oriented data, complemented by methods) for examining the possibilities of combining biogas production and feed-in into the gas network by the example of selected model regions. One aim of this information system is the spatial analysis with regard to defined prerequisites and based on this the determination of optimal plant locations and entry points as well as of the entire biogas feed-in potential. Apart from that, socio-economic, economic and ecologic effects are included as well. At the end of the project the developed geographical information system will be an instrument which serves to transfer the model calculations to other regions as well.

The final evaluation of the results and the transfer of the conclusions onto Germany as a whole will provide the basis for giving strategic recommendations. A strategic catalogue of measures relating to the various possibilities of energetic utilization of biomass as a contribution for achieving national goals of climate protection will be proposed.