LANDTECHNIK 71(4), 2016, 155–156

DOI: 10.15150/lt.2016.3135

LANDTECHNIK
AGRICULTURAL ENGINEERING

Spotlight

EEG – Quo Vadis? On the development of the Renewable Energies Act: Focus bioenergy

Dr.-Ing.
Bernd Krautkremer
Photo: private

The history of the German Renewable Energies Act (abbreviated as EEG in Germany) is certainly a success story, one reason why it is an oft-copied export model, used worldwide for encouraging further development of renewable energy (RE). Hereby, the core idea is a very simple one, involving guaranteed payment for electricity produced and fed into the supply grid. Contrary to pure investment support, this strategy encourages the operator to keep established plants in actual production. The system also represents a continual incentive for increasing innovation and efficiency.

However, where there's light there's also shadow. The necessity of subsidising RE comes from the fact that, initially, unsupported forms of RE had no chance of success in an energy market completely based on fossil fuel power. Financial support was therefore introduced to establish a base for various forms of RE whereupon they could be further developed to technical maturity as full-value elements within an energy supply system. Subsequently, they could emerge as real energy cost competitors against fossil fuel. This has been achieved to a large extent, although not for all RE forms. Also, more development is needed before RE can exist unsupported under market conditions where full environmental costs of using fossil energy forms are still not applied.

Bioenergy within the energy system

The complete focus on the amount of energy fed into the grid network proved to be very effective in the RE introductory phase when the target was displacing coal-produced electricity. But the strategy cannot address the multiple interests of a complex energy system. This applies especially to bioenergy. As effective stored solar energy, biomass offers power when not enough can be produced directly from wind and sun. Numerous studies confirm the necessity of this kind of compensatory balance where there is an increasing proportion of RE in the total system. Diverse adjustments to the EEG have already been undertaken so that bioenergy supply can develop in this direction. However, this approach means higher EEG costs because the associated value of bioenergy with this form of supply is not fully rewarded through the applied marketing instruments and quantity structures.

Often forgotten is the high potential of bioenergy in heat supply. Here, too, the initial focus on the amount of electricity fed into the grid - especially with biogas plants – resulted in the possible utilisation of the produced heat being neglected. Diverse EEG adjustments were made with the aim of increasing energy production efficiency in this way. These also led ultimately to EEG costs increasing.

Bioenergy as part of farming

Bioenergy also fulfils different requirements within the agricultural sector. From an economical aspect, biomass production for energy purposes backed by reliable long-term income guarantee has a stabilising effect on agricultural markets that can sometimes tend to volatility.

Often, the opinion is spread about that biomass production for energy is not sustainable and leads to increased maize monoculture in the countryside. However, the fact is that biogas technology in particular can contribute much towards making agriculture in total more sustainable. It offers this through the possibility of widening crop rotations, through using non-food plants as energy crops, or by conservation of culture landscapes, or through simply absorbing slurry manure from livestock. Especially the latter is also encouraged by EEG payments, which once again add to the EEG costs.

Summary

Using biomass for energy production can fulfil important system requirements: for energy production and within agriculture. Properly applied, the strategy offers important contributions in energy, economy and ecology. The continuing dominating EEG focus on the amount of electricity fed into the supply grid is now out-of-date. It fails to fulfil the complex requirements for a targeted bioenergy incentive system because the system efficacy is not sufficiently evaluated, or costs incorrectly allocated. Required to utilise the so important system characteristics of bioenergy, and to develop appropriate technology, is therefore a maximising of system efficacy and also an assurance of cost allocation fair to all production participants. In part, this also applies to other RE forms and will introduce phase 2 of the energy revolution in the form of targeted system development whereby bioenergy represents an important element of sustainable, reliable and cost-efficient energy supply.

Dr.-Ing. Bernd Krautkremer
Head of department Bioenergy System Technology
Fraunhofer Institute for Wind Energy and Energy System Technology IWES