

Biogas – a promising prospect?

The answer to this question is clearly “yes” in the most varied of fields. In principle, biogas could replace a considerable quantity of natural gas. To achieve this, however, the technical possibilities of biogas production, the available agricultural land and all usable raw materials produced would have to be utilized to their full potential.

Cultivating energy crops is seen as the most important source of raw materials for the production of biogas. The energy content of grass is between 170 and max. 213 kWh/t and that of maize silage is between 198 and 335 kWh/t. Since energy crops are cultivated near to biogas production sites, the energy gained from them is practically carbon neutral.

Biogas gives us the opportunity to improve our carbon footprint. Yet there are still a few hurdles to overcome before biogas makes its way into the natural gas grid. At the end of 2009, 23 plants piped approx. 100 million cubic metres of conditioned gas into the gas grid. Many people would like there to be more of these plants. According to a survey, the potential biogas capacity is approx. 24 billion cubic metres per year, i.e. less than 1% of the potential has been utilized in the past year.

Where do the market opportunities lie?

There are a wide variety of reasons to account for the fact that so few plants have been built and we cannot list them all here. Therefore let us focus instead on the market opportunities open to biogas.

The expected revision of the German Gas Network Access Ordinance GasNZV could mean that the expense situation for those willing to inject biogas into the gas grid improves, and this could lead to a higher demand for gas injection.

In other European countries too, biogas is consistently on the road to success. In Poland, where the biogas market is still in the fledgling stages, approx. 2000 biogas plants are expected by 2020. In France, approval procedures for biogas plants have been simplified and in Russia, an ordinance has been issued stipulating



Biogas production plant Kielen, Luxembourg

a share of 4.5% for renewable energies by 2020. If you observe the bar chart, you will see that there is still considerable potential in Europe.

Raw materials for the production of biogas

Renewable raw materials (RRM) currently provide the lion's share of primary materials for the production of biogas. Everyone expects supermarket shelves to be full until the shop closes which, along with various other factors, results in around 200 tons of foodstuffs being thrown away in Germany alone. This organic waste will become increasingly important in the future – the challenge is to use the energy potential of this waste wisely and profitably.

Biogas as a fuel

A vehicle powered by biologically produced methane with an internal combustion engine can do around 70,000 km with a fuel consumption rate of 7.4 l per 100 km. The required amount of fuel can be produced on one hectare of cultivable land. Fuel made up of 10 or 20% biogas is already available in 75 filling stations. The second filling pump allowing you to fill up with biogas only was installed as early as the summer of 2009.



Biogas as a job generator

The entire renewable energy sector is a job generator, employing around 280,000 people at present. In the past year alone, the number of jobs has increased by about 80,000. Biogas is seen a guarantor for the development of jobs, especially in rural areas.

Biogas as a technology transfer

The German biogas industry generated over 650 million euros in 2008 of which more than 20% came from abroad. The technological advance is based on the experience of more than 4000 biogas plants and around 23 biogas injection rigs in Germany.

A long way down the line

AirLNG wants to set new standards with new aircraft fuels. The answer is called “jet LNG” (liquefied natural gas: LNG and BioLNG) as regards price, environment and climate footprint as well as availability and resources. Both base products would ideally be combined to form an extremely clean, liquid fuel.

“Imagination is more important than knowledge, for knowledge is limited.” With this quote by the physicist Albert Einstein, I would like to make an appeal: it calls for a great deal of imagination from all participants in order to increase the proportion of biologically produced methane over the next few years. Environmentally friendly production and processing of energy should likewise be focussed on here – as I would put it, in harmony with nature!