

For the Salvation of Biofuels

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The production of biofuel (bioethanol and biodiesel) is again and again under fire worldwide. For the most part, the criticism is unjustified, but on some points we should take them seriously.

It is said, biofuels are pushing up the food prices and are therefore to blame for hunger in the Third World....

The criticism of the competitive Situation for feeding people is nonsense. The hunger in the world is certainly not based on the coexistence of energy and food production, but has as a major cause that in many parts of the world, the regional agricultural structures were destroyed by wars, by corruption, by the cultivation of products that are not suitable for the region, and last but not least, by the global market prices for animal feed.

Only eighty years ago, not only in Europe, about 15 to 20% of agricultural land was used for the cultivation of energy crops, because the draught animals finally needed food. According to estimates by the German Farmers' Association, in 2011 only around 3% of the available farmland was used for the cultivation of energy crops worldwide, and according to the OECD forecasts this would be doubled until 2020.

From the world grain consumption in 2011 only 7% were used for ethanol production, from sugar it was about 30% and this sugar was to 98% made from sugar cane. A similar Situation is given for vegetable oil.

In view of these figures, there can hardly be any question that energy production from crops is the price-determining market variable for food production. On the contrary, the enormous price increases for grain as feed and production of food meant that in many places biofuel production had to be stopped.

It also means bioethanol has a poor ecological balance and it is exploitation of nature....

However, one has to face the reproach of exploiting nature and the poor eco-balance of bioethanol. Unfortunately, it is a fact that in many parts of the world an unscrupulously environmental damage take place. Water is polluted and wasted and a lot of energy is used to produce bioethanol.

Regardless of the energy that must be expended for the production and supply of the raw material grain, for the normal production of 1 ton of bioethanol an average consumption of about 3,000 kWh is required. It's directly for steam production in the bioethanol plant and indirectly for the generation of the required electricity.

This energy consumption (from fossil sources) corresponds to CO₂ emissions of ca. 0.9 t.

But that does not have to be!

If the residuals, called as slop, stillage or distiller's wash, are used for (self-) energy production, with a well-planned biogas plant, it is possible to produce from the slop which accrued during the production of 1 t of bioethanol, approx. 3,800 kWh of energy in the form of biogas. This amount of energy is sufficient to provide the bioethanol plant with the required energy.

The bioethanol plant will be independent of fossil energy and the market risks of the energy market. The self-generated energy is renewable and CO₂ neutral.

This own energy supply is also a question of sustainability and economic security of production. After all, the energy costs are approx. 25% of the producing costs for bioethanol.

The fermentation residues are processed to a valuable fertilizer ready to be used on the fields without greenhouse gases emission. Using this fertilizer avoid the CO₂-intensive production of artificial fertilizer. The material cycle is closed.

By this way, the CO₂ balance of bioethanol production is greatly improved and the eco-balance of bioethanol is quite excellent compared to other (fossil) fuels.

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