Fluid biofuel and biogas

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The most efficient use of agricultural land for producing bioenergy is the thermal utilisation of whole plants. This is followed closely by biogas fuel production. The combustion of whole plants and biogas to generate electricity has a thermal utilisation efficiency of only 40%. In practice it is usually not possible to utilise the waste heat in a worthwhile and efficient way.

In biofuel production biogas – with a fuel equivalent of 4,977 litres – is more efficient than bioethanol produced from sugar cane (Brazil) and bioethanol from sugar beet. If a technically worthwhile production process can ever be found for biohydrogen, it would still be a less efficient source of energy than biogas or biomethane. Nature produces biomethane as a fuel for us in a very economic way.

Biogas (biomethane) is even more interesting as a fuel when net energy yields per hectare are compared. Today biogas from silage maize, Sudan grass and other productive energy plants already produces a net energy yield of 42,000 to 62,000 kWh per hectare. In contrast BTL can only produce 33,600 and bioethanol from sugar beet only 24,400 kWh net per hectare.

In terms of CO_2 saving costs biogas is the most favourable of all biofuels. Biogas fuel production also has the greatest saving potential per hectare.

With regard to biofuel costs, biogas compares closely with biodiesel and also very favourably in a European comparison. Naturally no European biofuel can match the prices of fuel produced in Brazilian sugar cane plantations, which sometimes deploy production techniques that destroy the soil. There would also be no sense in having a European biofuel initiative which destroyed millions of hectares of rain forest for short-term supplies of fuel for Europe.

Therefore, amongst the various biofuel production possibilities in Europe biogas is the biofuel with the greatest yield and the most favourable costs, and it is also the most environmentally friendly option. The valuable plant nutrients nitrogen, phosphorous and potash are returned to the soil in a regional cycle. The entire value added and many jobs remain in the rural regions.

Consequently, in Austria the Federal Minister for Agriculture, Forestry, the Environment and Water Management, Josef Pröll, together with OMV general director Dr. Wolfgang Ruttenstorfer decided on a 5-point programme for introducing biogas to the fuel market. This programme envisages that there should be at least 50,000 bio/CNG vehicles operating in Austria by 2010, at least 100,000 bio/CNG vehicles by 2013, and that the number of bio/CNG vehicles should increase to approximately 800,000 by 2020. Initially the main focus will be to operate the vehicles in the conurbations. The long-term aim is to provide around 10 % of total fuel requirements from bio/CNG by 2020.

In this period of time at least 15 to 20 million bio/CNG vehicles, with a fuel requirement of 20 billion Nm3 bio/CNG, can be deployed on roads throughout Europe. If 100% of this fuel is produced on farmland in Europe, approximately 6 million hectares of agricultural land will be necessary. However, at least 30-35 million hectares of unused agricultural land are available. Today 30-35 % of Europe's fuel requirements can already be covered by biogas produced on

the land which is already available. If – as already planned in Austria – a mixed fuel with natural gas with the same quality could be introduced to the market, 60 to 70 % of Europe's entire fuel requirements can be covered by the fuel source bio/CNG.

Why haven't the German or international automobile industries recognised this opportunity and seized it?
The answer is simple but clear.
Biogas, as the most efficient fuel, is not part of the centralised market system of the fossil fuel and nuclear energy industries!!!
Therefore such an efficient fuel that is available on a decentralised basis cannot be allowed on the market. As an alibi, for instance, the German gas industry allows a 10 % admixture to natural gas as a fuel.
We demand that at least a 50% admixture should be introduced to the market as bio/CNG brand fuel throughout Europe.
The efficient technology is today already available worldwide. More than 6 million bio/CNG vehicles are already operating worldwide today. At just a few billion euros per year, building vehicle fleets and setting up networks of filling stations and biogas plants is comparatively cheap compared to the billions of euros necessary for continuing fossil and nuclear fuel systems and securing them with military means.
However, biogas is not only an ideal fuel for Europe but also in particular for countries which are developing an ideal decentralised energy carrier for contributing towards providing rural regions with electricity and fuel. For instance, in Mato Crosso in Brazil a nationwide concept is being drawn up, which will enable the most remote regions to be cost-effectively provided with electricity and fuel from biogas.

The second part of my presentation deals with the global necessity of reducing CO_2 emissions from fossil fuels.

The discrepancy between easily exploitable oil and increasing global demand is widely known.

Optimistic estimates of available quantities and costs for developing deep sea deposits, oil sands and oil shale show that if all these available deposits were exploited this would amount to 4 to 5 times the volume of oil that has already been produced. Apart from the probable costs of several billion euros, the expected quantities of CO_2 emissions are 4 to 5 times as much as the total amount of CO_2 emissions from fossil fuels up to now.

The latest investigations on the rapidly accelerating climate change mean that such massive interference in our global climate is totally unacceptable. The African boat refugees in Spain are just a small foretaste of climate-driven mass migrations of people all over the world if the "business as usual" CO_2 scenario becomes reality. The 2500 kg CO_2 emissions per head must be achieved. They can only be achieved using controlled market mechanisms.

Energy efficiency is therefore the top priority with regard to all energy utilisation.

- The 4-litre car,
- the 5-litre apartment,
- 80% efficiency for every type of energy conversion and

- energy efficient use of available space in producing bioenergy (4,500 litres of fuel equivalent instead of 1,000 litres of fuel equivalent per hectare) must be the basis of every energy-relevant decision.

Further development and utilisation of all forms of renewable energy systems is the second highest priority with regard to all energy-relevant decisions.

The 10 theses on the energy industry draw the conclusion that the market must send lasting and tangible signals to all energy consumers through a progressively increasing, internationally coordinated CO_2 control policy, and the burden of any fiscal measures introduced to provide leverage for this policy must be compensated by simultaneous massive reductions of all other taxes.

The example of the state of Styria in Austria illustrates that a reliable, lasting CO_2 reduction policy can reduce gross energy consumption and continually increase the proportion of renewable energy using known technologies that can already be efficiently used today. This scenario can already be depicted for most countries today if national and international policies guarantee the necessary stable and reliable framework for appropriate developments.

Controlling through taxation is the instrument that should be used throughout the world. Global CO_2 reduction can only be achieved through global control mechanisms.

Worldwide labour taxes, trade taxes, property taxes, capital yield tax and value-added taxes are halved or still reduced considerably. At the same time taxes on CO_2 are continually increased in a coordinated international effort.

The example of Germany shows that wage/income tax is being reduced by 80%, capital yield tax by 50%, corporation income tax by 63%, value-added tax by 67%, trade tax by 70%, property tax by 60% and other minor taxes are being reduced by 50% or being completely done away with.

The counter arguments to this proposal have been well known for a long time, and directed by the fossil fuel lobby.

The fact of the matter is that today, rather than suffering an economic downturn, we are enjoying strong economic growth despite the relatively high oil price. Despite the high oil price the most energy-intensive companies are making the biggest profits of all time.
Renewable energy systems are booming.
Millions of new jobs are being created by these new decentralised energy systems.
In the interests of energy efficiency and renewable energy, small and medium-sized enterprises are receiving orders worth billions.

There is really no real reason why this international reorganisation of the tax systems should not begin immediately, starting with the OECD countries but then also involving national economies that are currently undergoing strong growth. The G8 Summit could provide the impetus for this by adopting a binding master plan for an international CO_2 tax policy instead of conducting other useless international conferences.

But why is this not possible?

95% of all politicians responsible for dealing with this issue know too little about these excellent opportunities or they have direct or indirect interrelationships with national or international energy corporations.
Apart from this, 95% of all studies on energy policy are directly or indirectly sponsored by fossil fuel corporations. There is practically no research with sufficient specialist knowledge that is independent of fossil fuel corporations.
Therefore independent activities must be networked to break through the blockade which these fossil fuel companies have set up, in order to enable a rapid change in energy policy.

Each additional year of useless conferences and their related delay strategies means that climate collapse is approaching with increasing speed.