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Ladies and Gentleman,

my most intensive meeting with the science and technology in the field of Biomass for Energy, Agriculture and Industry I had when I chaired the VII. European Biomass Conference in Florence 1992, together with David Hall as the chairman of the scientific committee. Many things happened in the last decade for Bio-Energy. The most important are, in my point of view, the increasing policy awareness on Bio-Energy and the increasing awareness of the car industry to recognise Bio-Energy as a transport fuel.

For both intentions I could help for in my capacity as legislator in the German Parliament and in my roles as President of the Agricultural Committee of the Parliamentary Assembly of the Council of Europe in the years 1994-1997 and as President of EUROSOLAR. Last week we had the first World Forum for Renewable Energy in Berlin, focused on policies and strategies, but with one special session about Bio-Energy for transport fuels. We wanted to champion this point because time is overdue to push this point, not only because of the ecological disasters caused by fossil fuels. At the end of 2001 "The Economist" put the global petroleum drama in the centre of a volume under the title "The addiction from oil". Their argument was, that Renewable Energies could offer an alternative to fossil and nuclear electric power production, but not for transport fuels. This thesis of "The Economist" shows that there is already a deep information gap about Bio-Energy, deeper than to other options of Renewable Energies. This gap creates more and more a fatal situation: all know, that petroleum will be the first fossil energy to be exhausted. Increasing political tensions will happen if our societies are not prepared to organize an alternative. The mineral oil industry favours natural gas, but even this potential is

restricted and creates much more climate problems than it is discussed, mainly because of methane emissions along long gas pipelines.

A new global oil crisis could happen every month, originated by political catastrophes. The vulnerability of our societies by oil and even natural gas dependencies is a ongoing existential risk for the global economy and most national economies. The highest risk is carried by the developing countries. Their debts increased between 1973 and 1982, during the two world oil crisis, from 200 Billion to 1,2 Trillion dollar. It never was reduced since then. A new oil crisis will lead to a definite disaster of their societies.

This explains why time is overdue for the replacement of fossil fuels by Renewable Energies. Fossil fuels represent an overall security risk not only for foreign security but also for economic, social and ecological security. Alone the military expenditures of the United States, even before September 11, for protecting the oil sources in the Arabian Peninsula and the Gulf States, are 50 Billion Dollars per year that is a 100 Dollar per Barrel oil, which is transported from this region to the United States. Biomass plays an indispensable role for this process of substituting fossil and nuclear by Renewable Energy. Organising this substitution must become the most important strategic project if we want to overcome these risks.

The main role of biomass will be the replacement of transport fuels, if we compare the specific opportunities of the various Renewable Energy sources. The three big sectors of energy consumption are

- heating and cooling of buildings
- electric power
- transport

In the heating and cooling sector the main Renewable Energy options will come by solar thermal energy and by electric power from Renewables, based on the future of architecture towards solar buildings. Wind, PV and Hydro-energy represent the alternative for electrical power production. From this it results that the main determination of Biomass will be the transport fuels. This is much less complicated

and faster to apply than pure hydrogen – and the regional winning of hydrogen from plants is again more attractive than by a global hydrogen infrastructure.

What did we do in Germany for the policy promotion of Biomass:

- in 1995 we decided that Plant oil for transport fuels becomes free of any energy tax. The result is that we have now a plant oil supply of 500.000t per annum, which already substitutes 1% of petroleum. This helped to stop the decline of the agricultural sector. The highlight of the Biomass energy projects is the new constructed Reichstag in Berlin. This building uses 100% Renewable Energy, realized mainly by two 400 kW Cogeneration stations in the building fueled with rape oil.
- in 2000 we adopted the Renewable Energy Act for the Electric Power Sector, based on a guaranteed access to the grid for all producers of Renewable Electricity and a guaranteed minimum prize for every delivered kWh from this. One result is that we could triple the number of Biogas-plants from 500 to 1500 within two years. Moreover: in the last months we produced a draft, with which we foresee a further increase of the guaranteed minimum prize for Bio-Electricity below a capacity of 500 kW.
- But in my point of view more important is our newest step in legislation. At the 7th of June we decided a 100% cancellation from all energy taxes for Bio-Transport fuels up to the year of 2008. The sense of this new law is to give a broad incentive for all Bio-Energy in this field of energy consumption and not only for plant oil. We were able to organize the support for this law not only by the farmers union, but also by the car industry and the federal environment protection association.

The German car industry recognised, after along time of considerations, that bio-fuels would be the best alternative, not only for future cars with fuel cells but also for combustion motors. Doing that they start to overcome their own dependency from fossil fuels, preferring now Bio-Methanol (DaimlerChrysler, VW) or Bio-Ethanol (Ford-Company). Two local utilities in Germany are just prepared to produce Bio-Methanol and their idea is to open with this a regional business for transport fuel production, linked with the regional agricultural and forestry sector. With this new law people will get very soon the opportunity to buy Bio-fuels for a lower prize than fossil fuels. This

is the framework for a dynamisation of the replacement of fossil fuels. This is the policy criterium we need everywhere.

Accompanying to this new law the German Parliament adopted a resolution, addressed to the EU-Commission and to the EU-Council: The draft for a EU-Directive for bio-fuel taxation foresees only a 50% reduction for transport-taxes from Biomass. This 50% reduction is not enough for a real push and it would water down our new law. We went to insist on the point that there should be the opportunity for a 100% tax exemption for at least some years. And I want to motivate you to give such a message from this conference to the Commission, the Council and the EU-Parliament.

Besides such legal frameworks all Biomass supporters should be aware of a lot of mental restrictions against biomass which still do exist in the minds of the society, of politicians, of many scientist, of medias and of environmentalists. Discussions on Biomass show not only information gaps, but also an intellectual bias against Bio-Energy. This is challenging all Biomass-supporters and their work. In order to champion biomass it is necessary to overcome the information and bias chaos about the real potential of biomass, environmental effects of biomass for energy and the specific economic tools for biomass. There exist many foolish studies on the potential of biomass and even not few biomass experts do not use or refer to the unique and convincing work of David Hall, which shows the tremendous potential. Many studies do not distinguish between plants and plants, although there are potential differences of 1:100 or more. Or they do not distinguish the different conversion methods, which lead again to different real potentials.

On the one hand we have a remarkable scientific and technological progress. On the other hand the general discussion about biomass is guided by many persons, who are in the state of illiterates when they judge about Bio-Energy. All general studies about the potential, the costs and the environmental effects, or on the benefits for agriculture are nonsense, if they are done without such distinctions. Moreover: they will become a part of the long list of mal-information. Even famous scientists or scientific institutes belong to this list, not always intentionally. This causes a very controversial debate on biomass. Without overcoming the information gaps these

conflicts will increase. There is no doubt: every agriculture can be done in a non-sustainable or in a sustainable way – referring to the soil and the land-using in general, to the water problems, to the fertilization problems and to the problems of protecting plants with herbicides, fungicides or pesticides. This is the case of food production and it will be the case of biomass for energy and raw materials. If Biomass will be planted in non-sustainable ways, the image will become worse as many so-called modern agricultural productions are. But there is a unique chance to overcome futureless agricultural production methods by the enlargement of food production with the opening of more and more production of Bio-Energy and Bio-Raw-Materials. This unique chance is to use the multifunctional economic effects of biomass and focussing the development strategies on this.

That means: to take into the considerations, recommendations and calculations the opportunities for the reinforcement of agricultural productivity of food production by using the residues as Bio-Energy, or of Bio-Energy conversion productivity by offering not only Bio-Energy to the markets but also offering the ashes of Biomass-gasification, the oil-cakes from oil-pressing or other remaining resources after the conversion to the market for fertilizers or for animal food.

It is necessary to have in our minds the unique opportunity to come back to the ecological cycle of economy, to a revitalisation of regional economies and of the agricultural sector. Let us promote Biomass with this spirit.