ACADEMIA ENGELBERG

5th Dialogue on Science – October 9 - 11, 2006

in Engelberg, Switzerland

Workshop Fossil Energy Protocol

Speaker: Günter Strempel

Rapporteurs: Irmgard Bühler, Samuel Witzig

The discussion focused on the following four subjects:

1. BP's oil production and R&D strategy
2. Different needs of energy forms in different regions of this world
3. Non acceptance of new energy forms and of new technologies among consumers
4. Modern communications vs. business travel.

1. BP's prognoses on crude oil reserves are very optimistic, which is not very surprising: BP is a stock quoted company and its success is measured by the ratio of replacement of used oil reserves. Their research decisions are rather based on the company's corporate view and strategy as well as on inputs and divergent views received by attending conferences than on well-known facts, since they 100% information security is never available. BP has a two-fold research strategy. First, in short term they develop new products (roadmap 2-3 years). Second in the long term, they do basic research to explore new technologies as well as new basic knowledge, trying to be up to date on any form of energy production. Other energy forms, such as renewable energy, solar energy and biomass energy, will not replace fossil fuels, but will rather be supplementary to oil and extend its life span.

2. Many new developed products on the market do not find its consumers. Even 3-4 litre cars are rarely bought since luxury and fast cars are more in fashion (automatic window openers and all other electronic gadgets consume energy). There are also new fuels on the market like high cetane diesel and premium gas, but both of them are too expensive, since the market does not request them. Hydrogen will not be used as a mobile energy source (cars, buses, airplanes), but rather stationary (e.g. power plants, factories).

3. It depends on whether one looks at the global or regional level which energy sources/mix will have to be used. Some countries that do not have an existing infrastructure for oil already use and will use new forms of energy even more in the future e.g. natural gas to power their cars or buses. But most countries will still depend on oil. Biomass energy is not reasonable to use in some places. "Free" left over from food production exists only in the industrial world, where food is plentiful. Many developing countries have either food shortage and/or a scarcity of natural resources like water, which does not allow the use of biomass for energy production. There are some plants (e.g. Jatropha), which grow in rough places (salty ground, water scarcity) and can be used to produce oil/gas. In the future, different energy forms will establish, meaning they will be complementary. So one might choose the car based on the fuel that powers it.

4. The participants of the discussion all agreed that new forms of communication like video conferencing would never completely replace mobility, and that the amount of travelling did not really increase in the last centuries but only the way how to travel (500 years ago, they used to walk, now we take the plane), meaning the travelling time remained the same.

Conclusions:

1. There are alternatives to oil, which are more ecological, but consumers don't buy them. This requires political action and incentives to change patters of behaviour.

2. We do need to keep research up to date in any field to fit the energy mix to the need of the consumers in different parts of the world.

3. Our next big problem will be water scarcity, since water is needed to produce most of the bio fuels. We are looking forward to the Academia Engelberg 2007.