



## Biofuels – a dead-end?

Traffic is responsible for 20 percent of Hungary's CO<sub>2</sub>-emissions and the sector shows a constantly increasing tendency for energy demand. Adversely to the initial aim for producing biofuels – i.e. to offer an environmental friendly alternative to the transport sector – the production and usage of biofuels seems to be less and less an effective tool for fighting climate change. Recently, several expert studies have even questioned the fact that investing in biofuels would lead to any reduction of CO<sub>2</sub>-emissions at all and United Nations representatives, high-ranking politicians as well as several NGOs have called on the Commission to withdraw its 10 percent target.

**Agricultural effects** – According to calculations approximately 316 kilotons of bioethanol will be necessary in Hungary in order to reach the 5.75 percent goal by 2010. Roughly 182 000 hectares of arable land can produce the needed amount of corn, which amounts to 44 percent of Hungary's total arable land suitable for producing energy-plants in an environmentally sustainable way.

Predictably if agricultural production for energy purposes as well as for food and fodder production will battle for the available crop lands globally, this competition is going to lead to price increases of agricultural products.

**Greenhouse effect** – The amount of CO<sub>2</sub> and other GHG emissions that can be saved by using biofuels highly depends on the plants utilized and the technologies applied. The cereal-based bioethanol produced in Europe only leads to 20-50 percent savings of GHG emission. By using rape-based biodiesel the amount is 40-60 percent. At the same time in terms of acidity (SO<sub>2</sub> equivalent) both the usage of bioethanol and biodiesel brings worse results than the traditional vehicle-fuels. A lot of more cost-effective solutions for GHG saving exist, e.g. increasing the efficiency of engines or using different hybrid-technologies.

**Economic effects** – The technology of producing first generation biodiesel or bioethanol is a mature one, thus a significant decrease in production costs can not be expected.

Rivalry for agricultural territories has a significant price raising effect. The Agricultural Outlook 2007-2016 study, prepared by OECD and FAO also emphasizes the role of biofuels in the recent price increases. According to their prognosis food prices are likely to grow by 20-50% until 2016.

Those companies not fulfilling the Hungarian mixing rate of 4,4 percent in terms of both biodiesel and bioethanol, have to pay 8 HUF/liter more revenue tax. According to our calculations by this regulation the state covertly subsidizes the saving of 1 ton of CO<sub>2</sub>-emission with more than EUR 1000 (!).

**Other environmental considerations** – Many of the biofuels showed a higher environmental load than the traditional fuels regarding indicators like the excessive use of fertilizers, ecological toxicity or the possibility of summer smog. Only a few types of biofuels (like the wood- and whey-based ethanol or frying oil) had altogether a less negative environmental impact than traditional vehicle fuels.

**Security of supply** – The main type of energy used for the technology is heat energy based on natural gas. Thus by producing biofuels the dependence on crude oil is decreasing whilst the dependence on natural gas is increasing.

**Possible solutions** – On one hand there are possibilities to be explored in the fields of technological development. On the other, big opportunities lie in changing our lifestyles and the ways of transportation and traffic, e.g. in increasing the share of public and railway transport, or in decreasing the need for commuting by the promotion of car-sharing and regional development measures.