

Media Release

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On the move with wood and manure

Local biofuels for sustainable mobility

By 2030, biofuels and electro-mobility could replace 41 per cent of the fuel Switzerland needs. Hence the latest study by the Centre for Technology Assessment TA-SWISS. But it will only happen under optimum conditions and if vehicles consume an average of just four litres of fuel per 100 kilometres.

In this optimal computation, fossil fuels will be replaced by the following sustainable energy forms in individual motor car traffic: 15 per cent first and second generation sustainable biofuels, and 26 per cent electro-mobility using power from renewable resources.

Positive result, even with few ambitious assumptions

In the view of Rainer Zah, researcher at Swiss Federal Laboratories for Materials Testing and Research Empa and Project Manager for the TA-SWISS study, “a realistic scenario is one in which biofuels in Switzerland replace a maximum 10 per cent of fossil fuels.” In his opinion, sustainable biofuels would have to be promoted in Switzerland. “Because”, he says, “even if the percentage share of local biofuels is modest, it roughly corresponds to the annual power consumption of more than one million one-family homes.”

Home-produced fuel

There are numerous raw materials in Switzerland that could be used for the production of second generation biofuels: timber, wood from demolition waste, biowaste, straw or other parts of plants which have a high cellulose content. Such raw materials are already being processed into liquid fuel or synthetic gas in pilot facilities. There is also considerable potential for the production of biogas from manure and slurry, although in this case, first generation technologies are used. The advantage of these feedstocks is that as by-products of farming, they do not compete with the cultivation of plants for food. The only thing is, they are also used for other purposes. Accordingly, a balanced use ratio must be found that takes the needs of the farming industry and ecology into account.

Promote sustainable fuels and more efficient engines

For more sustainable mobility, the recommendation of the TA-SWISS study is that the following aspects must be considered: vehicle efficiency must be improved as a matter of urgency. First generation biofuels must be promoted in parallel with those of the second generation. In addition, long-term, reliable strategies are needed to create a favourable environment for investment. Every effort must be made for resources to be used sustainably and not in competition with food production. To do this, we should move away from unilateral emphasis on the CO₂ balances; greater consideration must be given to ecological and social aspects – including in the lands of the south.

Moreover, it is also established that there will always be a degree of uncertainty in connection with future technologies, and that we must therefore learn how to deal with them.

Interdisciplinary research team produces future-oriented analysis

This extraordinarily multifaceted analysis has been made possible because researchers at Empa, the Geographical Institute of the University of Zurich and the Wuppertal Institute for Climate, Environment and Energy conducted this study jointly. The special merit of this research is that the study assesses the potential that biofuels offer in respect of sustainable mobility, not considered in isolation but taking future scenarios into account. In the first section of the study, a number of criteria are used to analyse entire value chains — from the extraction of the feedstocks, through their processing into biofuels, and up to consumption. Finally, three future scenarios selected with the aid of mathematical models are contrasted with the potentiality computations.

Links to further information

[Recommendations](#) (english)

[Short summary](#) (german, french, english)

[Executive Summary of the study](#) (english)

[Information on the project](#)

Publications

[Journey into the green. How far can we go with second generation biofuels?](#) TA-SWISS, ed., Bern 2010. (Abridged version of the study “Future Perspectives of 2nd Generation Biofuels”)

Study “Future Perspectives of 2nd Generation Biofuels”. TA-SWISS, (ed.), vdf-Hochschulverlag der ETH Zürich, 2010 (for the Medias available on request)

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Centre for Technology Assessment TA-SWISS

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