



Master thesis topic: Optimizing the implementation of biofuels in the Swiss energy and transport sectors

The topic of this thesis is to examine the environmental and economic impacts of biofuel production in Switzerland. Furthermore, the optimal use of limited Swiss biofuel resources will be examined in both the energy and transport sectors.

Based on literature review and expert interviews the student will first determine the future potentials of various biofuel production pathways in Switzerland. The most promising of these pathways will then be modelled using the methodology of life cycle assessment and life cycle costing. In a further step, the environmental benefits and consequences of replacing standard fuels with biofuels in various applications (such as electricity and heat production or meeting various transport demands) will be examined. Based on these results, the student will be in a position to make recommendations about the best utilization of limited Swiss biofuel resources, and the contribution that biofuels could make towards meeting Swiss energy and climate goals.

The thesis is to be performed within the Technology Assessment group in the Laboratory for Energy Systems Analysis and the Paul Scherrer Institute in Villigen, Switzerland. This thesis is part of the SCCERs Mobility and Supply of Electricity.

Interested students are encouraged to contact Brian Cox* for more information. Please include a short academic background on yourself including study programme, course list, and current grades.

*More information:

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PSI group webpage: www.psi.ch/ta/

SCCER Mobility project webpage: www.sccer-mobility.ch/

SCCER Supply of Electricity project webpage: www.sccer-soe.ch/