

Poster abstract

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Electromobility – A means to close the gap between sustainable alternative fuels and the energy demand in the EU 2030?

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No matter which of the possible scenarios will take place, the European Union will face an increased energy demand in the transportation sector in the year 2030. Due to various reasons from climate issues to peak oil, our society will not be able to cover this demand by using fossil fuels. The present study investigates what portion of the estimated energy demand within the transportation sector of the European Union in 2030 could be substituted by sustainable alternative fuels. All assumptions made to develop the estimations on e.g. the development of the European population, the potentials to increase the efficiencies from tank to motion, the availability agricultural land, the conversion efficiencies and technological option for the production of alternative fuels, and further more are based on combining various reliable studies on those issues. Included in this study is a critical selection of alternative fuels looking at the sustainability. Restrictions such as, not using food to produce fuel, the possible cultivation and production within the EU, the transportability and storability in existing infrastructure, the usability in existing vehicles a.m. were taken into account. The technical potential of the total production of alternative fuels in the EU 2030 is directly compared with the respective estimated energy demand. The estimated technical substitution potential amounts to 7.5 EJ/a (57%). This figure does not take social and economic variables into account, which can drastically reduce this substitution-potential. The study clearly points out, that there is no way besides further developing technologies to enable electro-mobility to build up a significant share of the transportation sector in the EU in near future.