

## BIO-ENERGY'S ROLE IN THE EU ENERGY MARKET: A 2010-2020 PERSPECTIVE

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**ABSTRACT:** The paper reports on a study commissioned by DG-TREN of the EC, that wishes to further develop its policies regarding the increased use of bio-energy. Three fundamental economic factors and their interaction were investigated, i.e. the demand function for renewable energy in general and biomass in particular, the supply function of biomass and biomass derived fuels, and the technology development function. There are several scenario models in use for this type of studies. One well-known model is SAFIRE, developed by ESD, and used in the TERES II study which formed the basis for the EC's 1997 White Paper on renewable energy "Energy for the Future". Other models were used in e.g. the EC supported Shared Analysis Project (1998). One characteristic feature of these models is the assumption of a perfectly elastic supply curve. Supply elasticity is an unrealistic assumption though. In the study reported here, more realistic inelastic supply curves are derived and used. The model used for projecting demand curves is SAFIRE. Innovative modelling elements are the emerging trade in biomass fuels, and the incorporation of new technologies (such costs, today, and in the future (2010, 2020) and also reviews the technology development function, in terms of capacities and costs, conversion efficiency, penetration and learning. The paper analyses the influence of policy alternatives (REs targets vs. GHG emission trade, European energy crops vs. biomass imports), and investigates the relevance of technologies for further R &TD.

**Keywords:** biomass resources, energy market, bioenergy policy