

Bioenergy politics in Europe with a particular focus on wood fuel

Peter Stein

Abstract

Biomass is a key resource for a sustainable energy development. An analysis of the entire production chain of bioenergy (harvesting, forwarding and energy conversion) shows that bioenergy supply and use is embedded in a complex network of interests. The use of woody biomass and wood energy in particular – due to the multiple functions of wood – touches upon many areas (social, political, environmental, economic, etc.) and the specific interests of a large and heterogeneous group of stakeholders. European countries have experienced very different developments in their bioenergy markets and hence, a uniform and single-minded policy strategy across Europe does not seem to be sensible.

A policy strategy supporting bioenergy can be composed of different policy instruments, which aim at improving different aspects. An overview and discussion of possible policy instruments illustrates this issue. In particular, a survey on major European policy measures is provided. If optimally applied, a bundle of suitable policy instruments can be able to mitigate barriers to bioenergy diffusion at the lowest costs to society. The experience curve concept allows policy makers to anticipate cost developments of technologies as cumulative production (or installed capacity) rises, and thus makes it possible to adapt policy instruments in a foresighted manner. Furthermore, experience curves provide policy makers with estimates regarding when innovative bioenergy and other renewable energy technologies will reach economic competitiveness with well-established technologies.

Densified wood fuels, such as pellets, raise the transportability of wood fuels with the effect that the trade volume of biomass is increasing. Major biomass traders in Europe are located around the Baltic Sea, constituting key players for a European wood energy market development. Although international biomass trade becomes more and more important, biomass markets today are still only partially integrated and, therefore, prices can differ strongly across Europe.

Due to the availability of densified wood fuels and innovative conversion technologies (e.g. fully automated residential pellet heating systems) the modern use of wood energy bears a significant potential to substitute for fossil energy use. Major advantages of modern wood energy use, compared to traditional wood heating systems, are the convenience of the application, much lower pollutant emissions, and high efficiencies.

Semester Thesis WS 2004/05

Supervisor: Dr. Reinhard Madlener

CEPE, ETH Zurich



Centre for Energy Policy and Economics
Swiss Federal Institutes of Technology