

Economic impacts of energy efficiency and renewable energy in Germany

Topic: Environmental IO models 2

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Energy efficiency and renewable energy sources are the two main pillars of the future energy system the German government aims at with its long-term energy concept. The paper reports the economic impacts of the two pillars based on two recently finished studies. The economy-energy-environment model PANTA RHEI has been used in both. PANTA RHEI is an environmentally extended version of the econometric simulation and forecasting model INFORGE, which includes a time series of input-output tables for Germany. Among others it has been applied for economic evaluation of different energy scenarios that have been the basis for the German energy concept in 2010.

Results show both for energy efficiency and for renewables positive economic impacts concerning GDP and employment. Additional investment increases demand in the short-run and reduces energy costs in the long-term. On regional level, efficiency and renewables measures create additional value added and employment. The paper shows the overall effects under different assumptions for fossil fuel prices, domestic installations and international trade. The development of world markets and German exports are very important. Globally, countries will change their energy system. The necessary substitution from fossil fuels to energy saving and renewable investment favours the structure of the German economy and opens excellent export opportunities for German industries. The paper also discusses some methodological aspects and differences of measuring economic impacts of energy efficiency and renewable energy.