Implications of different climate protection regimes on the EU-27 and its member states till 2050 (to be submitted).

Authors: M. Blesl, T. Kober, R. Kuder, D. Bruchof

Abstract. To limit the increase of global warming to an acceptable quantity, a clear reduction of global greenhouse gas emissions is necessary. But not the need for a reduction is discussed, key issue is the break down of the reduction targets between the different world regions or even countries.
Therefore, the project Planets funded by the European Commission evaluated the cost optimal global burden sharing to reach a global emission reduction target. This result of global modelling is an optimal split between the world regions and is the initial point of this study. Given different reduction pathways for Europe (depending on the global target, commitments of the world regions and trade possibilities), the optimal ways to reach these targets and the impact on the European energy system are analysed.
The study evaluates how Europe can contribute in a cost optimal way to keep global greenhouse gas emissions below 530 ppm (or below a stricter global target of 500 ppm). Therefore, the emission reduction potentials of the different sectors and countries and the role of key technologies are analysed using a model based approach based on the TIMES PanEU model.

Keywords. Energy System modelling, Climate policy, Emission reduction, EU-27.