Geophysical Research Abstracts, Vol. 8, 06856, 2006
SRef-ID: 1607-7962/gra/EGU06-A-06856

The Costs and Strategies of Climate Protection Lessons from a Modelling Comparison Exercise

O. Edenhofer

Potsdam Institute for Climate Impact Research, PO Box 601203, 14412 Potsdam, Germany (Ottmar.Edenhofer@pik-potsdam.de)

The Innovation Modeling Comparison Project IMCP is an international collaboration of economy-energy-environment modelers with the objective of improving the understanding of the impacts of differences in model formulations on model results on the one hand, and to identify robust patterns of results across models on the other hand. The IMCP focuses on mechanisms for implementing endogenous technological change and its impact in the context of climate policy. Technological change is widely recognized as key to tackling the economic aspects of climate change; the mechanisms by which such change occurs, and the diverse and varied ways this can be included in the models is less well understood. This comparison addresses these questions by running different CO_2 stabilization scenarios using ten models including ITC as well as corresponding scenarios without ITC, with everything else being the same. Findings from this comparison are that climate policy does induce additional technological change, in some models to a substantial extent. The effect of this technological change is, unanimously and in all participating models, a reduction of abatement costs. The models predict different dynamics for rising carbon costs, including a decline in the costs of carbon towards the end of the century. The majority of models predict mitigation costs below 1% of world social product which is relatively low compare to conventional models omitting crucial aspects of technological change.