



Conceptual Challenges in Assessing Climate Targets under Uncertainty and Learning

D. Neubersch (1), H. Held (1), A. Lorenz (2), and E. Kriegler (3)

(1) Research Unit of Sustainability and Global Change, ZMAW, Universität Hamburg, Germany (delf.neubersch@zmaw.de),

(2) Environmental Change Institute, Oxford, England, (3) Potsdam Institute for Climate Impact Research, Germany

Most climate-energy-economy models use cost-effectiveness analysis (CEA) when assessing climate targets. CEA runs into inconsistencies when considering an uncertain climate and the possibility of future learning (Schmidt et. al., 2011). To analyze climate targets under uncertainty and handle learning consistently Cost-Risk-Analysis (CRA) has been proposed by Schmidt et. al. Here we show how this method performs by comparing different learning scenarios and the value of the learned information. Emerging counter-intuitive effects are discussed and the advantages and disadvantages of this method are shown in contrast to former methods. The example simulations are carried out numerically with the coupled climate-energy-economy model MIND (Edenhofer et al., 2005, Held et al., 2009).

References:

Held, H., Kriegler, E., Lessmann, K., & Edenhofer, O. (2009). Efficient climate policies under technology and climate uncertainty. *Energy Economics*, 31, S50–61.

Edenhofer, O., Bauer, N., & Kriegler, E. (2005). The impact of technological change on climate protection and welfare: Insights from the model MIND. *Ecological Economics*, 54, 277–292.

Schmidt, M. G. W., Lorenz, A., Held, H., & Kriegler, E. (2011). Climate targets under uncertainty: Challenges and remedies. *Climatic Change: Letters*, 104(3–4), 783–791.