

Minimizing the Cost of Abatement under Imperfectly Observed Emissions

Paweł Bartoszczuk

*Systems Research Institute, Polish Academy of Science, Newelska 6, Warsaw
Email: bartosz@ibspan.waw.pl*

Abstract

Marginal abatement curves are the starting point for determining the demand and supply for emission permits. We simulate the market for emissions permits by considering uncertainty in emission inventory reports. The approach taken in this analysis is to enhance the emissions reported in each region by a certain part of their uncertainty when compliance with the Kyoto targets is being proved. While this formulation is not new in the literature, we calculate additional costs that the uncertainty bears apart from costs resulting from shifting the Kyoto targets.

This paper differs from the previous research in data sets and methodology. More scenarios are taken into account. We distinguished five regions and attempted to calculate how much each region will reduce emissions or buy permits and how high are benefits from trading. We also calculate the total benefits, ie. How much the total reduction cost can be decreased by emission trading.