

Abstract

This paper assesses the economic value associated with the development of various low-carbon technologies in the context of climate stabilization. We analyze the impact of restrictions on the development of specific mitigation technologies, comparing three integrated assessment models used in the RECIPE comparison exercise. Our results indicate that the diversification of the carbon mitigation portfolio is an important determinant of the feasibility of climate policy. Foregoing specific low carbon technologies raises the cost of achieving the climate policy, though at different rates. CCS and renewables are shown to have the highest value, given their flexibility and wide coverage. The costs associated with technology failure are shown to be related to the role that each technology plays in the stabilization scenario, but also to the expectations about their technological progress. In particular, the costs of restriction of mature technologies can be partly compensated by more innovation and technological advancement.