

ENVIRONMENTAL HEALTH RISKS AND BENEFITS CAUSED BY CLIMATE PROTECTION POLICIES IN EUROPE

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Background and Aims: Policies and measures for mitigation of climate change are nearly always chosen with considering only a few criteria like the reduction of CO₂-equivalent emissions, costs and acceptability. However, there are relevant side benefits or side detriments that are also important for the assessment, especially secondary environmental health impacts. 'Secondary' here means that they are not caused directly by climate change, but by changes in environmental pressures caused by mitigation policies. These secondary impacts should be taken into account when designing climate policies; it is thus the aim of the work described here to estimate these health impacts for important climate protection policies.

Methods: The health risks are determined using the 'integrated environmental health impact assessment' methodology developed in the EC projects INTARESE and HEIMTSA. For two scenarios, one with and one without the policies assessed, the changes in pressures to the environment (e.g. PM_{2.5} emissions) are determined. These are then transformed into concentrations in air or food using atmospheric and multimedia models. The last step is the estimation of health risks with the help of exposure-response- or intake-response-relationships derived from epidemiological studies.

Results: Results show that the health impacts of a number of climate change mitigation policies and adaptation measures are as important as the avoided climate change effects. Policies like e.g. promotion of wind energy or better efficiency of electronic equipment cause a significant reduction of health risks, while others, especially the use of wood stoves and the better insulation of buildings, might under certain conditions cause large negative health risks.

Conclusions: Thus using results of epidemiological studies within an integrated health impact assessment provides an important contribution to support decision making. A number of policies will improve their cost-benefit ratio, others would only be recommended, if accompanying measures like filters for wood stoves or mechanical ventilation systems in insulated buildings are foreseen.