

CHALLENGE FOR THE INTEGRATION OF CLIMATE AND AIR POLLUTION RESEARCH AND POLICY

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Climate research and policy and air pollution research and policy are often considered to be separate issues. Climate policy currently aims at structural changes in the energy production system to reduce CO₂ emissions and reach acceptable levels of climate change. Air pollution policies, through end-of-pipe technologies, consider the reductions of classical pollutions, NO_x, CO, SO₂, NH₃, NMVOC, and particles. The most cost-effective policy is the one that addresses both issues in a coherent manner. The co-benefits of structural changes for reducing air pollution are obvious as less end-of-pipe measures will be required to keep conventional pollutants at acceptable levels. Other more subtle links exist between climate change and air pollution that might be considered to optimize an integrated climate change and air pollution policy. There is increasing awareness that ‘conventional’ air pollution influences climate and that ‘climate gases’ (e.g. CH₄) in turn influence air pollution (e.g. O₃). Further to this, climate change may in turn change the levels of air pollution. We give examples of current developments in the integration of climate and air pollution research. We discuss in more detail multi-model, multi-scenario calculations that look at the combined effects of reductions in emissions of pollutants such as NO_x, CO, NMVOC and methane on the levels of ozone and methane. Opportunities for effective (“win-win”) policies can easily be identified. On the other hand, the role of aerosols / particulate matter in the climate system makes it a particular challenge to develop an effective integrated policy, as reducing of the overall burden of particles for health reasons is thought to lead to regional and global warming.