

Air quality and ancillary benefits of climate change policies

Action to combat climate change will deliver considerable ancillary benefits in air pollution abatement by 2030. The ancillary benefits will be:

- lower overall costs of controlling air pollutant emissions in the order of EUR 10 billion per year;
- reduced air pollutant emissions, leading to a fall in damage to public health (e.g. more than 20 000 fewer premature deaths/year) and ecosystems.

Ancillary benefits will be greater in 2030 than in 2020. However, climate change policies will reduce the overall cost of the air pollution abatement measures needed to meet the objectives of the Thematic Strategy on air pollution by 2020.

Action to reduce air pollution, including emissions from shipping, will be required to move closer to the EU long-term objectives for air quality.

The Thematic Strategy on air pollution aims to improve European air pollution significantly by 2020. An upcoming report from the European Environment Agency looks a further ten years into the future, and brings together two major policy challenges — combating climate change and reducing air pollution — in an integrated way. Thus, the report analyses projected changes in European air quality up to 2030, and explores the possible benefits of climate policies on air quality and the costs of air pollution abatement.

Existing air pollution abatement policies (i.e. those without new action taken within the framework of the thematic strategy) should lead to cleaner

air in 2030 compared to 2000. However, EU's objective of attaining levels of air quality that do not give rise to significant negative impacts on and risks to human health and the environment are unlikely to be met. With existing measures only, the situation is even projected to worsen after 2020. In this scenario — the baseline scenario — 311 000 premature deaths are projected each year in 2030, due to pollution with ground-level ozone and fine particles (PM_{2.5}).

EU has stated that the long-term climate objective should limit global mean temperature increase to 2 °C above pre-industrial levels. EU's contribution to meeting this target will mean climate policies which substantially reduce

emissions of greenhouse gases. This, in turn, will lead to a fall in air pollutant emissions and their associated health effects, while at the same time reducing the costs of implementing existing air pollution abatement policies. In this scenario — the climate action scenario — the number of premature deaths from pollution by ozone and fine particles is projected to fall by over 20 000 to 288 000 by 2030. Moreover, the costs of implementing existing air pollution measures is projected to fall by EUR 10 billion per year. The avoided health costs could be valued at between EUR 16–46 billion per year.

These ancillary benefits of climate change policies stem from the fact that reducing EU greenhouse gas emissions in

line with the 2 °C target leads to reductions of emissions of air pollutants from fossil fuel combustion. Reductions are most notable for oxides of nitrogen (10 %), sulphur dioxide (17 %), and particles (8–10 %) by 2030, as compared to the baseline. Cost savings related to the implementation of existing air pollution abatement measures are highest in the EU-15. Relative abatement cost savings for oxides of nitrogen, sulphur dioxide and particles are estimated to be 20 %, 12 % and 14 % by 2020, and more than 35 %, 25 % and 25 % respectively by 2030.

Therefore, climate change policies can make a substantial contribution to reducing air pollution. The ancillary benefits of climate policies for air pollution are expected to be greater by 2030 than 2020, since a longer period of time would be available for implementing measures and for changes to occur in the energy system.

However, it is clear that significantly greater efforts will still be necessary in the form of further targeted air pollution abatement measures in order to move closer to the EU long-term objectives. Even if the maximum feasible land-based reduction measures in relevant sectors for abatement of air pollution were combined with climate policies — the maximum feasible reduction scenario — there will still be 200 000 annual premature deaths by 2030 from ozone and fine particles. Reductions in emissions from non land-based sources, especially shipping, are necessary if the health impacts are to be brought down further.

Reference

Air quality and ancillary benefits of climate change policies, EEA Technical report, 2006, Copenhagen (upcoming).

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