

Air quality in Europe — 2012 report



Contents

Acknowledgements	5
Executive summary	6
1 Introduction	15
1.1 Report objectives and coverage	15
1.2 Relevant policy instruments and legislation.....	17
1.3 Air quality and climate change	18
2 Particulate matter (PM).....	23
2.1 Sources and effects of PM	23
2.2 European air quality standards for PM.....	24
2.3 Europe-wide survey of PM.....	26
2.4 Exposure to PM pollution in Europe.....	37
2.5 Responses	37
3 Ozone (O₃).....	40
3.1 Sources and effects of O ₃	40
3.2 European air quality standards for O ₃	41
3.3 Europe-wide survey of O ₃	42
3.4 Exposure to O ₃ pollution in Europe	48
3.5 Responses	51
4 Nitrogen dioxide (NO₂)	53
4.1 Sources and effects of NO ₂	53
4.2 European air quality standards for NO ₂ and NO _x	53
4.3 Europe-wide survey of NO ₂ and NO _x	54
4.4 Exposure to NO ₂ pollution in Europe	61
4.5 Responses	62
5 Sulphur dioxide (SO₂)	63
5.1 Sources and effects of SO ₂	63
5.2 European air quality standards for SO ₂	63
5.3 Europe-wide survey of SO ₂	64
5.4 Exposure to SO ₂ pollution in Europe.....	67
5.5 Responses	68

6 Carbon monoxide (CO)	69
6.1 Sources and effects of CO	69
6.2 European air quality standards for CO	69
6.3 Europe-wide survey of CO	69
6.4 Exposure to CO pollution in Europe	74
6.5 Responses	74
7 Heavy metals	75
7.1 Sources and effects of heavy metals	75
7.2 European air quality standards for heavy metals	77
7.3 Europe-wide survey of heavy metals	77
7.4 Trends in concentrations and emissions of heavy metals	78
7.5 Exposure to heavy metal pollution in Europe	82
7.6 Responses	82
8 Benzene (C₆H₆) and benzo(a)pyrene (BaP)	83
8.1 Sources and effects	83
8.2 European air quality standards for C ₆ H ₆ and BaP	83
8.3 Europe-wide survey of C ₆ H ₆ and BaP	84
8.4 Exposure to C ₆ H ₆ and BaP pollution in Europe	89
8.5 Responses	89
References	90
Annex 1 AirBase	94
Annex 2 European policies and measures on air pollutant emissions	100