

# Summary

**1** This briefing on air quality has been prepared by the National Audit Office in response to a request from the Environmental Audit Committee. As well as providing background on air quality and the effects of pollution on health and the environment, this briefing sets out EU targets and UK objectives, and performance in the UK against them. It also sets out the various policies and instruments in place to tackle air pollution, and how the different government bodies are organised to deliver better air quality. Air quality is a devolved issue, and this briefing covers government policy in England and the UK for reserved matters, including performance against air quality standards, but not the work of the national authorities in Wales, Scotland or Northern Ireland in regard to their devolved functions.

**2** Air pollution is caused by the release into the atmosphere of chemicals and particles which are considered harmful to human health, vegetation or ecosystems. Such emissions occur naturally but also arise from human activity, particularly from the combustion of fossil fuels in industrial processes and transport. Air pollution is not just a local issue. Emissions can travel large distances in the atmosphere and cause adverse effects across regional and national boundaries.

**3** It has long been established that exposure to air pollutants can have a detrimental impact upon health. Particulate matter and ozone are thought to have the most significant effect. The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (the Air Quality Strategy), published in July 2007 by the Department for Environment, Food and Rural Affairs (Defra) in consultation with the Department for Health and other government departments, recognises that air pollution is estimated to reduce life expectancy by around seven to eight months, averaged over the whole population of the UK. Air pollutants can also have wide-ranging environmental impacts, from localised effects including loss of biodiversity and reduced crop yields, to a potential contribution to climate change.

**4** The main cost of air pollution assessed at present arises from the adverse health effects. The Air Quality Strategy estimates that the health impact of air pollution experienced in the UK in 2005 cost between £8.5 billion and £20.2 billion a year. Defra estimates that current measures to tackle air pollution will reduce this cost to between £6.2 billion and £14.7 billion in 2020. The financial costs of environmental effects have not yet been assessed.

Paragraphs 1.9 to 1.18 in Part 1 cover the health and environmental impacts of air pollution, as well as the financial costs.

**5** The European Union aims to achieve levels of air quality that do not result in unacceptable impacts on, and risks to, human health and the environment. European policies aim to improve air quality by setting various legally binding limit values and target reductions for different air pollutants. For some pollutants, target values are set, which do not carry legal force. In addition to European limits and targets, the UK has adopted air quality objectives for the nine main health-threatening air pollutants in the UK: benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide, ozone, particulates, polycyclic aromatic hydrocarbons, and sulphur dioxide. The objectives are at least as stringent as corresponding European limit values, and in some cases more so, but they do not have direct legal force.

Paragraphs 2.2 to 2.12 in Part 2 set out the international and national legislative framework for ambient air quality and pollutant emissions.

**6** The UK is meeting EU limit values and UK objectives for benzene, carbon monoxide, lead and 1,3-butadiene. The UK is meeting all EU limit values and UK objectives for sulphur dioxide except for one objective that is stricter than international guidelines. The UK is not meeting EU limit values or UK objectives for particulate matter (PM<sub>10</sub>) and is not on track to meet EU limit values or UK objectives for nitrogen dioxide (NO<sub>2</sub>) by the 2010 deadline. In addition, the UK is not on track to meet EU target values and UK objectives for ozone and polycyclic aromatic hydrocarbons.

**7** As the UK did not meet the PM<sub>10</sub> limit values by the 2005 deadline, Defra has applied for a time extension for meeting the target. The European Commission has rejected this application for extension in Greater London. Defra is considering its response and expects to resubmit its application with further information as soon as practicable.

Paragraphs 2.18 to 2.26 summarise the UK's air quality performance. Appendix 1 contains details of each air pollutant and the UK's performance against all relevant targets. For key pollutants, performance across the country is illustrated on maps.

Paragraphs 2.27 to 2.30 in Part 2 set out details of the UK's application for a time extension to meet the PM<sub>10</sub> target.

**8** Defra and the relevant parts of the Devolved Administrations have responsibility for air quality policy in the UK. A key source of air pollution, however, is the transport sector. Road transport is responsible for up to 70 per cent of air pollutants in urban areas. The Department for Transport therefore has a key role to play in delivering cleaner air through policies such as the implementation of improved emission standards for new vehicles. In England and Wales, the Environmental Permitting Regulations provide the regulatory framework for dealing with air pollutant emissions from industrial processes. Similar legislation is in place in Scotland and Northern Ireland.

Part 3 sets out the different bodies responsible for delivering better air quality and how they work together. Appendix 2 provides details of specific policy instruments used to achieve better air quality.

**9** Local authorities play an important part in delivering improved air quality. Local authorities are required to carry out regular reviews and assessments of air quality in their area against standards and objectives prescribed in regulations. Under the Environment Act 1995, where any of these objectives are not being achieved, authorities must designate air quality management areas and prepare and implement remedial action plans to tackle the problem.

Paragraphs 3.19 to 3.20 in Part 3 describe the role of local authorities in air quality management.

**10** Local authorities are responsible for many functions that may affect air quality. Good cooperation between transport, regulation, air quality, climate change, public health, and spatial planning departments, as well as with partner organisations, is therefore required to ensure a strategic approach to tackling air quality.

Paragraphs 3.21 to 3.28 in Part 3 cover integration of air quality within local authority agendas, including funding.

**11** The air quality challenge presented in Greater London differs considerably from that faced by the rest of the UK. London is a large, densely populated urban area, where the exposure to air pollutants is high due to the sheer size of the city and the significant road traffic congestion. Outside London, in contrast, the challenge is characterised by small pockets of air pollution, for example along main roads in busy town centres where buildings can create a canyon effect that traps pollutants. To address specific air quality issues in London, the Mayor of London is required to prepare an Air Quality Strategy for London and report annually on progress in implementing it.

Paragraphs 3.29 to 3.33 in Part 3 set out the specific air quality issues relevant to London and how the delivery chain addresses these issues.