

The Air Quality Strategy for England, Scotland, Wales and Northern Ireland

Working Together for Clean Air

Department of the Environment, Transport and the Regions in partnership with the Scottish Executive, The National Assembly for Wales and the Department of the Environment in Northern Ireland.





The Air Quality Strategy for England, Scotland, Wales and Northern Ireland

Working Together for Clean Air

Presented to Parliament by the Secretary of State for
the Environment, Transport and the Regions
by Command of Her Majesty:

Laid before the Scottish Parliament by the Scottish Ministers:

Laid before the National Assembly for Wales by the First Secretary:

Laid before the Northern Ireland Assembly by the
First and Deputy First Ministers:

January 2000

Department of the Environment, Transport and the Regions
Eland House
Bressenden Place
London SW1E 5DU
Telephone 020 7944 3000
Internet service <http://www.detr.gov.uk>

© Crown Copyright 2000

Copyright in the typographical arrangement and design vests in the Crown.

Extracts of this publication may be made for non-commercial in-house use, subject to the source being acknowledged.

Applications for reproduction should be made in writing to The Copyright Unit, Her Majesty's Stationery Office, St Clements House, 1-16 Colegate, Norwich NR3 1BQ.

Printed in Great Britain on material containing: 75% post-consumer waste and 25% ECF pulp.
January 2000.

MINISTERIAL FOREWORD

Working Together for Clean Air



Air pollution is a serious problem. Up to 24,000 people die prematurely every year in Britain because of its effects. Many thousands more require hospital treatment. Because of the fragile nature of their lungs, children are particularly vulnerable. The cost to individuals and families is immense. But so too is the cost to the NHS and, because of lost work and productivity, the cost to the economy.

Some people believe that this is a problem we have solved. It is true that the great pea-souper smogs of the 1950s, which were caused by coal and wood fires in people's homes and coal-burning power stations, and which led to the deaths of thousands of people in London, are a thing of the past. But a new type of smog has replaced them, in some ways more dangerous because less visible. This is the smog caused by traffic fumes.

Pollution from road transport grew rapidly in the 1980s. I and colleagues in the devolved administrations have set our sights on reducing the effect of traffic pollution on local air quality by more than half through better designed cars and fuels.

The Government gave a commitment on taking office in 1997 to review the objectives set in the National Air Quality Strategy published by the previous administration. This set targets for levels in the air of eight pollutants which can adversely affect human health. We wanted to look at the prospects for delivering cleaner air more quickly. We carried out a wide-ranging review of the Strategy and this document, which has been produced in partnership with the devolved administrations, now includes tougher objectives for five of the eight pollutants.

In setting the objectives we have been committed to taking early action to reduce risks to health and the environment, based on the best evidence available. But sometimes there is scientific uncertainty about the extent of risks to human health. Where there is uncertainty, we err on the side of caution.

The objectives that we have now set in this Strategy for benzene, 1,3-butadiene, carbon monoxide, lead and nitrogen dioxide go further than the objectives included in the original Strategy. For sulphur dioxide, we have decided to retain our national objective, which provides a high level of protection for health, and supplement it with the European limit values.

Discussions are taking place in Europe on proposals to reduce emissions of pollutants that cause ozone and to set a target value for ozone. Since much of the ozone pollution in the UK is caused by pollutants emitted elsewhere, it makes sense to await the outcome of these discussions before deciding how to take forward our national objective.

On particles, PM_{10} , it is now clear that the original objective is unachievable. Even if we took every single car off the road – which is neither practical nor desirable – the limit could

be exceeded. To leave in place an objective which we know will not be met would devalue the entire Strategy. The objectives we are now setting are not aspirational; they are binding. Local authorities will have a statutory duty to take steps to meet them.

We have therefore decided that the target for particles should be replaced in the short term by the limit values that have now been agreed in Europe. But, because of the importance of the health effects of particles, we see this as a staging post rather than a final outcome. Work is in hand to look at the prospects of developing a new, more stringent national objective

Air pollution hits hardest the most vulnerable in our society. The old and the young, in particular those suffering from asthma and heart and lung diseases. It also tends to be worse in our heavily congested inner city areas where it exacerbates a poorer quality of life and increased social deprivation. Our commitment to delivering clean air is an important aspect of our wider policies to address social deprivation. That is why air pollution is one of the fifteen headline indicators of sustainable development – what I have called the Quality of Life Barometer.

Along with the right to clean air, we all have a responsibility to do what we can to keep it clean. As individuals, we can choose environmentally-friendly products, use cleaner fuels and make sure our cars are regularly serviced to improve fuel consumption and cut exhaust fumes. We can walk or cycle short distances rather than using our car, and save energy in the home and at work. Businesses can do much the same, and also ensure that they minimise the pollution they emit, particularly from industrial processes.

This Strategy sets out the way forward for air quality over the next few years. We have set the framework to achieve cleaner air that will bring health and social benefits to us all. We can all now play a part to help deliver clean air.

A handwritten signature in black ink, appearing to read 'John Prescott', written in a cursive style.

John Prescott, Deputy Prime Minister

CONTENTS

	Page
EXECUTIVE SUMMARY	7
CHAPTER 1	
Introduction	
Overview	11
Effect of devolution	11
Purpose of the Strategy	12
Intended audience	12
Guiding principles	13
Scope of the Strategy	14
CHAPTER 2	
Setting the scene	
Air Quality and Sustainable Development	16
Relationship with other Government initiatives	17
Developments in air quality	18
CHAPTER 3	
Legislative and policy framework	
The international context	22
National framework	26
CHAPTER 4	
Air quality standards and objectives	
Introduction	29
The setting of standards and objectives for the protection of human health	30
Standards and objectives for individual pollutants	38
Benzene	38
1,3-Butadiene	40
Carbon monoxide	41
Lead	42
Nitrogen dioxide	44
Ozone	48
Particles (PM ₁₀)	51
Sulphur dioxide	57
Objectives for the protection of vegetation and ecosystems	60

CHAPTER 5

Delivering cleaner air

Role of Government	63
Role of Industry	70
Environment Agencies and the Regulation of Air Quality	73
Role of Local Authorities	75
Business and Individuals	84
Transport and air quality	86

CHAPTER 6

Next steps

Future health work	97
Future cost/benefit work	97
Further monitoring	98
PM ₁₀ and NO ₂	98
New pollutants	98

TECHNICAL ANNEXE

Section 1

Introduction	A100
--------------	------

Section 2

Benzene	A104
---------	------

Section 3

1,3-Butadiene	A116
---------------	------

Section 4

Carbon monoxide	A126
-----------------	------

Section 5

Lead	A133
------	------

Section 6

Nitrogen dioxide	A138
------------------	------

Section 7

Ozone	A156
-------	------

Section 8

Particles (PM ₁₀)	A161
-------------------------------	------

Section 9

Sulphur dioxide	A182
-----------------	------

References

A187

USEFUL WEBSITE ADDRESSES

189

GLOSSARY

190

EXECUTIVE SUMMARY

Clean air is an essential ingredient of a good quality of life. People have a right to expect that the air they breathe will not harm them.

We have come a long way since the smogs of the 1950s, and air quality in the UK is generally very good. But there are still sometimes unacceptably high levels of pollution which can harm human health and the environment.

This Strategy describes the plans drawn up by the Government and the devolved administrations to improve and protect ambient air quality in the UK in the medium-term.

Our proposals aim to protect people's health and the environment without imposing unacceptable economic or social costs. They form an essential part of our strategy for sustainable development, which has four main aims:

- social progress which meets the needs of everyone;
- effective protection of the environment;
- prudent use of natural resources; and
- maintenance of high and stable levels of economic growth and employment.

The Air Quality Strategy will be subject to regular review so that we can refine policy as we learn more and develop new techniques. The next review is due to start towards the end of 2000. In the meantime, we will investigate further the impact of air pollution on health, and the costs and benefits of the Strategy objectives and will carry out further modelling and monitoring.

AIR QUALITY OBJECTIVES

The Strategy sets objectives for eight main air pollutants to protect health. Performance against

these objectives will be monitored where people are regularly present and might be exposed to air pollution.

There are also two new objectives to protect vegetation and ecosystems. These will be monitored away from urban and industrial areas and motorways.

Chapter 4 explains how we set the objectives, and the scientific work underpinning them is set out in the technical annexe.

The pollutants covered are:

benzene;

1,3-butadiene;

carbon monoxide;

lead;

nitrogen dioxide;

ozone;

particles (PM₁₀); and

sulphur dioxide.

The objectives are given in the table at the end of this summary.

Under local air quality management (LAQM), local authorities will work towards achieving the objectives prescribed by regulation for seven of the pollutants, but not that for ozone since this is affected by pollutants produced outside the UK. Nor will local authorities have statutory responsibility for the two new objectives for protecting vegetation and ecosystems.

Projections suggest that some of the objectives can be achieved through measures which we have already planned or introduced, such as tighter control of vehicle emissions and regulation of industry. Other objectives are more challenging and will require local authorities to take action at local level to reduce pollution in their areas.

RESPONSIBILITIES

International standards and agreements are most important as air pollutants do not respect territorial boundaries. International action is essential to reduce air pollution.

The Government's and the devolved administrations' role in improving air quality is to provide:

- a clear and simple policy framework;
- realistic but challenging objectives;
- regulation and financial incentives to help achieve the objectives;
- analysis of costs and benefits;
- monitoring and research to increase our understanding; and
- information to increase public awareness.

Industry is a significant source of some of the pollutants this Strategy tackles. We try as far as possible to take the most appropriate and cost-effective measures for tackling pollution. We are anxious that industry should not be over-burdened compared to other sectors as we move towards meeting the air quality objectives. Regulators will therefore not normally require industry to go beyond the best available techniques not entailing excessive cost (BATNEEC) in order to achieve the national objectives where these are tighter than the EC Environmental Quality Standards which the UK is required to meet.

Road traffic emissions make a significant contribution to levels of air pollution, particularly in towns and cities. The Government's White Paper *A New Deal for Transport: Better for*

Everyone, the parallel White Paper issued in Scotland, Policy Statements issued in Wales and Northern Ireland and their follow up documents describe how we plan to achieve an integrated transport system to cut congestion and pollution.

Local authorities are to draw up their own practical strategies for achieving the air quality objectives in their areas. Authorities have a range of powers they can use in pursuit of air quality objectives. These include Local Air Quality Strategies, smoke control and local traffic powers. Land use planning and the new local transport plans and strategies will also have a direct effect on improving air quality.

People also need to be aware that they too can help improve the air they breathe. The Government's *Are you doing your bit?* campaign shows how relatively small changes in people's everyday behaviour all add up. For example, walking and cycling rather than taking the car, or sharing the school run.

Objectives to be included in Regulations for the purposes of Local Air Quality Management

Pollutant	Objective		Date to be achieved by
	Concentration *	Measured as °	
Benzene	16.25µg/m ³ (5ppb)	running annual mean	31 December 2003
1,3-Butadiene	2.25µg/m ³ (1ppb)	running annual mean	31 December 2003
Carbon monoxide	11.6mg/m ³ (10ppm)	running 8 hour mean	31 December 2003
Lead	0.5µg/m ³	annual mean	31 December 2004
	0.25µg/m ³	annual mean	31 December 2008
Nitrogen dioxide †	200µg/m ³ (105ppb) not to be exceeded more than 18 times a year	1 hour mean	31 December 2005
	40µg/m ³ (21ppb)	annual mean	31 December 2005
Particles (PM ₁₀)	50µg/m ³ not to be exceeded more than 35 times a year	24 hour mean	31 December 2004
	40µg/m ³	annual mean	31 December 2004
Sulphur dioxide	350µg/m ³ (132ppb) not to be exceeded more than 24 times a year	1 hour mean	31 December 2004
	125µg/m ³ (47ppb) not to be exceeded more than 3 times a year	24 hour mean	31 December 2004
	266µg/m ³ (100ppb) not to be exceeded more than 35 times a year	15 minute mean	31 December 2005

* Conversions of ppb and ppm to µg/m³ and mg/m³ at 20°C and 1013mb.

† The objectives for nitrogen dioxide are provisional (see paragraph 194-197 below).

° How the objectives are to be measured is set out in Regulations.

National objectives not to be included in Regulations for the purposes of Local Air Quality Management			
Pollutant	Objective		Date to be achieved by
	Concentration*	Measured as ^o	
Objectives for the protection of human health			
Ozone [‡]	100µg/m ³ (50ppb) not to be exceeded more than 10 times a year	daily maximum of running 8 hour mean	31 December 2005
Objectives for the protection of vegetation and ecosystems			
Nitrogen oxides [†]	30µg/m ³ (16ppb)	annual mean	31 December 2000
Sulphur dioxide	20µg/m ³ (8ppb) 20µg/m ³ (8ppb)	annual mean winter average (1 October to 31 March)	31 December 2000 31 December 2000
<p>* Conversions of ppb and ppm to µg/m³ and mg/m³ at 20°C and 1013 mb.</p> <p>‡ The objective for ozone is provisional (see paragraphs 215-216 below)</p> <p>† Assuming NO_x is taken as NO₂.</p> <p>^o How the objectives are to be measured is set out in Regulations.</p>			