

EU focus on clean **air**



European Commission

Directorate-General
Environment, Nuclear Safety and Civil Protection

A great deal of additional information on the European Union is available on the Internet. It can be accessed through the Europa server (<http://europa.eu.int>).

Cataloguing data can be found at the end of this publication.

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Preface

European Union policy concerning the protection of the environment and natural resources has steadily grown in importance since the 1980s. The reason for this is that the threats of environmental damage and depletion of natural resources are still far from being under control. Fortunately, many people have become more aware of the hidden dangers and have demanded stronger action at national and, especially, European level in order to protect the environment.

As a result, the range of measures at our disposal in order to conduct environmental policy, ranging from legislation to financial instruments, has been strengthened enormously. In particular, the Treaty of Amsterdam has made the principle of sustainable development and a high level of environmental protection one of the top priorities (Article 2). Our policy has also become much broader and more diversified, covering all sectors of society and encompassing a wide range of instruments.

Some topics are of particular concern to many European citizens. One of these is air quality. This is also one of the areas in which Europe has been most active in recent years. The European Commission has aimed to develop an overall strategy. Member States are required to transpose and implement new directives on air quality which set long-term quality objectives. But it is also our direct responsibility to cope with this problem, changing our day by day behaviour. Let's leave the car in the garage in favour of walking, biking or using public transport whenever possible! Only then will our cities become a better place to live in.

Like the availability of capital, manpower, or transport infrastructure, the quality of air is likely to become a



determining factor in the location of investment and therefore economic growth of a region. The way in which not only cities, but also companies, organise their transport systems will become, without any doubt, one of the major priorities of years to come.

How to inform citizens on air quality? European legislation defines precise obligations, relating to informing the public in the event of significant pollution such as ozone exceedances of recent years. Each one of us has the right to demand national and local authorities to take action to improve our air quality.

The European air strategy is addressed in this brochure. It is intended to inform local and regional players, NGOs, policy-makers at all levels, social partners and consumers, as well as citizens. We also hope this information will give you ideas about how you can make your own particular contribution towards resolving environmental problems.



Air in Europe — the issues

We all need good quality air for our own health and that of our environment. But over the last few years many of us have seen newspaper headlines reflecting the dangerous effects of emissions to the air from human activities. For example:

- 'More children suffering from asthma';
- 'Hole in the ozone layer getting larger';
- 'Forests dying due to acid rain';
- 'More storms and droughts in the future'.

Concrete action already taken at different levels — international, European, national and local — has helped, but more still needs to be done.

Climate change

Natural variations in the earth's climate have always occurred. But recently changes have been taking place which, it is generally accepted, result from human activities. This 'global warming' is due to the release of increased amounts of so-called greenhouse gases which affect the level of absorption and emission of the sun's radiation through the earth's atmosphere.

Main causes:

- carbon dioxide (CO₂) from energy use, transport, industrial processes, deforestation;
- methane (CH₄) from energy production and use, certain forms of agriculture, landfills;
- nitrous oxide (N₂O) from fertilised soils, biomass burning, combustion of fossil fuels;
- chlorofluorocarbons (CFCs) from industrial activities, refrigeration, aerosols.



Main effects:

- rise in sea-level;
- increased extreme weather conditions such as floods, storms and droughts.

Ozone depletion

The ozone layer which protects the earth from harmful ultra-violet radiation has become thinner and thinner over the last 25 years. Over Antarctica, the ozone layer has been so badly damaged that a hole has developed which is gradually getting bigger.

Main causes:

- chlorofluorocarbons (CFCs), and to a lesser extent hydrochlorofluorocarbons (HCFCs) from refrigeration, foam blowing, aerosols and solvents;
- methyl bromide from soil fumigation in agriculture and biomass burning.

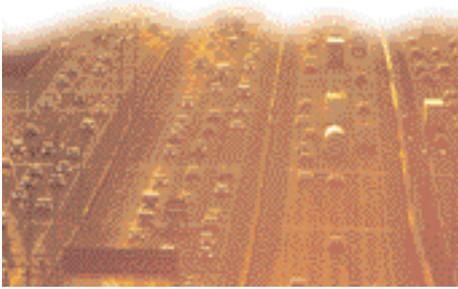
Main effects:

- skin cancer in humans;
- damage to marine ecosystems.

Acidification

Acidifying substances deposited in soil and water can have serious effects on certain species of plants and animals. Many of these substances result from human industrial activities and are carried by the wind thousands of kilometres from their source before being deposited. Acid deposition is





currently well above tolerance levels in many ecosystems. For example, around 20 % of forests and lakes in Scandinavia are dead and another 30 % have been badly affected, mostly by pollution from other countries.

Main causes:

- sulphur dioxide (SO_2) and nitrogen oxides (NO_x) from burning of fossil fuels;
- ammonia (NH_3) from agriculture.

Main effects:

- plants and fish die because they cannot survive in more acidic environments;
- building materials are damaged;
- pollutants like heavy metals and nitrates are more easily released into groundwater.

Urban air quality

Problems like global warming, ozone depletion and acidification are very worrying, but can seem remote from our daily life. Of more direct concern to many health experts, policy-makers and citizens is the link between poor air quality and human health. Polluted air is a problem, especially in our cities.

Urban areas are where most of our industry and traffic is concentrated, and are home to almost 80 % of the European population. Action taken over the last 30 years to tackle the worst air pollution from industry in European cities has improved the situation greatly. However, huge increases in

car traffic over the same period mean that poor air quality, caused by vehicle emissions to the air, still poses a serious danger to human health.

Table 1

Air pollutants and health

Pollutant	Main source	Main health effects
Benzene	Motor vehicles Chemical industry	Causes cancer Affects the central nervous system
Heavy metals (e.g. arsenic, cadmium, lead, mercury and nickel)	Industrial processes Energy production Motor vehicles	Cause cancer Give digestive problems Damage the nervous system
Nitrogen dioxide	Motor vehicles Other fuel combustion processes	Causes respiratory illnesses Damages lung tissues
Ozone	Transformation of nitrogen oxides and volatile organic compounds produced by traffic in the presence of sunlight	Produces respiratory problems Reduces lung function Worsens asthma Irritates eyes and nose Reduces resistance to infections
Particulates	Fuel burning — e.g. diesel and wood Industry Agriculture — e.g. ploughing, burning-off for fields Secondary chemical reactions	Cause cancer Produce cardiac problems Give rise to respiratory diseases Increase the risk of infant mortality
Sulphur dioxide	Fuel combustion	Causes respiratory problems

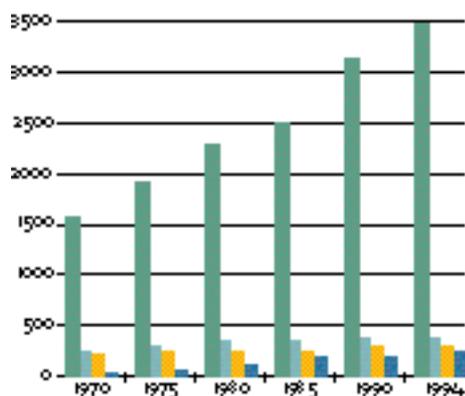
Source: European Commission: Clean air for Europe's cities, 1997.

Transport and air pollution

Nowadays we travel more often and further by all modes of transport but especially by private car. Cars are used for almost eight out of every ten kilometres travelled in the

Graph 1

**Passenger transport
(billion passenger-kilometres) and
modal split (% of all kilometres
travelled), EU-15 1970-94**



Source: European Commission (DG VII, Eurostat).

European Union. Half of all car journeys are under six kilometres in length.

Growth in car traffic has come about for a number of reasons:

- Land-use planning — the planned separation of homes, workplaces, shopping and recreation centres, forces us to travel by car as other forms of transport are not available or are inconvenient.
- Increased city size — through such planning, cities have grown outwards. Many of us live in suburbs. Distances to be covered are greater. It is very expensive to run good public transport services to these areas.
- Investment in roads, both within and outside cities, has been far greater than in public transport.
- The real price of travel by car compared to the general cost of living has decreased and continues to fall, meaning that we can travel further and more often. As we are generally richer than 25 years ago many of us can afford to buy second and third cars.
- Car culture — although we travel more by all modes of transport there is a certain status attached to owning and using a car.

With such tremendous growth in car traffic it is not surprising that our cities have become congested and polluted. People used to travel more quickly in our cities in the days of the horse and cart than they do now during peak times — not exactly the freedom and speed of movement which we seek! And, although car engines individually are now cleaner than before, what we have gained by reducing emissions per car we have lost by using more cars to cover more kilometres.

What is the European Union doing?

Air pollution is a problem which affects every one of us. And we all have a role to play in finding the solutions. The European Union is playing its part at a number of different levels.

At international level

Air pollution does not respect national boundaries and sometimes can be best tackled at international level. EU actions include the following:

Climate change

At the Kyoto international environmental summit in December 1997 it was agreed that industrial countries would reduce their greenhouse gases by 5.2 %. The EU agreed to reduce its emissions by 8 %.

Ozone depletion

The EU's 1996 targets for the elimination of CFCs were met. The objective of a 35 % reduction in the level of HCFCs by 2004, followed by a total ban by 2030 are on schedule.

Acidification

As a whole, the EU has met the requirements of international acidifying substances protocols under the United Nations treaty on long-distance transboundary air pollution.

At European level

At international level the EU can only persuade and encourage other countries to take action. Within Europe, the European Commission is able to propose new legislation which must be incorporated into Member States' law. Through





legislation much progress has been made in tackling pollutants like sulphur dioxide, lead and CFCs.

However, the European Commission realises that legislation alone is not enough and, through a range of other tools, is helping Member States to improve their air quality by:

- entering into agreements with industry;
- supporting scientific research and technological development;
- assisting sectoral and spatial planning;
- improving the quality and quantity of environmental data;
- examining alternative fiscal measures to favour sustainable development;
- supporting public information and educational campaigns;
- promoting professional education and training;
- providing financial support.

At city level

The new framework directive on urban air quality management is a key element of the EC strategy for improved air quality. It imposes strict monitoring requirements on cities for a number of pollutants as well as the duty to prepare action plans to deal with poor air quality over the short and long term. An important option offered to city authorities by the framework directive is the right to 'suspend activities, including motor-vehicle traffic when there is a risk of limit values being exceeded'. Information is a major requirement

of the framework directive. When air quality standards are breached cities must make public their plans to improve the situation.

Box I

Selected current EU actions to improve air quality

- Introduction of an environmental impact assessment directive for land use planning.
- Adoption of a new framework directive on air quality and plans for so-called 'daughter directives'.
- Tightening of legislation relating to vehicle emissions, fuel composition and noise control. Agreement with the oil and automobile industries on the 'auto-oil programme' to reduce noxious emissions.
- Promotion of good practices in sustainable transport. For example, the European Commission supports the car free cities network which currently comprises 60 members — including Amsterdam, Barcelona, Copenhagen and Palermo — has working groups on commercial traffic, public transport, car sharing, road pricing, commuting, less polluting urban vehicles, and cycling and walking. The EC also supports ELTIS — the European local transport information service — an on-line database of good practices.
- Evaluation and development of new technology, including road pricing and route guidance throughout the EU.
- Promotion of cycling as a mode of transport, for example through the Eurovélo programme with its planned trans-European network of cycle paths.

Past successes — hope for the future

Although air quality issues continue to cause concern, particularly in cities due to increased car traffic, the picture is not all doom and gloom. Success stories are to be found, and their number is growing all the time.

As part of the international effort to achieve a reduction in greenhouse gas emissions, the EU adopted in 1996 a strategy on reducing CO₂ emissions from new passenger cars. As part

of this strategy, the Commission has made a voluntary agreement with the European automobile manufacturers, where industry has committed itself to reduce average CO₂ emissions from new passenger cars by 25 % over the next decade; further agreements will now be made with importers. To complement the agreements with car manufacturers the EC has proposed a fuel-economy information scheme which will provide objective information on the fuel consumption of passenger cars to consumers.

Compared to their peak value, annual production of substances which deplete the ozone layer has been reduced by between 80 and 90 %.

Emissions of sulphur dioxide in Europe were reduced by 50 % between 1980 and 1995.

New public transport systems recently opened in several cities across Europe have attracted an increased share of passengers through their high service levels and quality, combined with actions taken to deter car use.

Many cities have made their centres car free, making themselves safer, cleaner, more pleasant places to live, work, shop and relax.

Whilst planners and politicians often continue to focus on meeting the needs of the car, more and more people realise that cycling is a real alternative mode of transport in the city. Examples of new city cycle path networks can be found from Volos in Greece to Dublin in Ireland.



What can each of us do?

Some of the solutions to our air quality problems lie in new technology. But in itself technology is not enough. We must all consider the options available to us for the way we plan, travel and live. We can all make a difference!

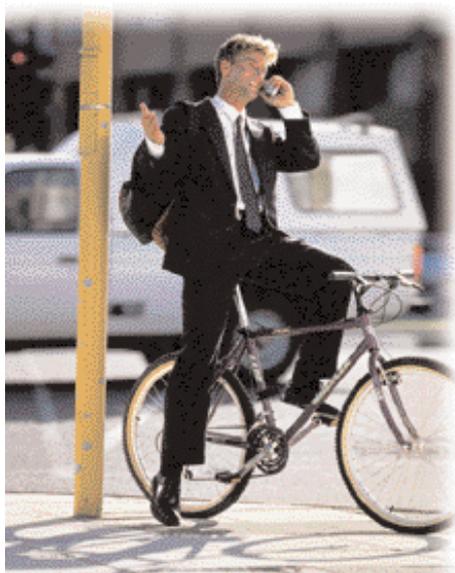
As a citizen

1. Think seriously before using your car for a journey. Consider the benefits offered by other modes of transport. For example:
 - increased safety
 - reduced congestion
 - better health
 - saved time
 - saved money
2. If you still decide to drive, what about sharing a vehicle with someone? Many employers run car pooling and car sharing schemes. And maintain your car in good order — engines, tyres and filters in good condition save emissions and money!
3. Buy 'green': for example, when buying your next car, take advantage of the European 'carbon dioxide and cars' labelling scheme (which should come into effect in 2001) to buy a less polluting vehicle.
4. Let your municipality see that you support measures to improve facilities for public transport, cyclists and pedestrians. Point out what has been done in other places you have visited.

As an employer

Congestion is an enemy of business, costing an estimated EUR 120 billion (or 2 % of European GDP) every year in Europe. Your business is clearly not helped by all the traffic on our roads. As an employer, there are a variety of possible measures you can take.

1. Look at moving raw materials and end products around in conjunction with other local firms, cutting both costs and environmental impact.
2. Start a 'commuter plan' with your local authority or with other businesses to encourage your staff to use alternative means of transport to the car to get to work. For example, encourage your employees to travel to work together, car sharing or car pooling, offer travelcards for public transport, start a (mini)bus pick-up service from central points, improve cycling facilities at your company.
3. Examine the company car policy of your business — do so many people need to use a company car?



As a local authority

The same pattern of development — concentration of homes, industry and traffic — which contributes to poor air quality in cities, provides an opportunity to tackle these problems in an integrated and cost-effective way. Further, in this era of globalisation, an accessible city, with a pleasant and healthy environment, is attractive for outside investors, as well as for its citizens. There are a number of important considerations.

1. Plan your city so that people do not need to travel so far or so often. Concentrate new developments within the city,

not on the edge, and around public transport nodes — train stations, metro, tram and bus stops. Mix different functions — home, work, shopping and leisure.

2. Restrict car access to, and parking in, certain areas.
3. Enter into partnerships with local businesses to help them establish commuting plans and find alternative ways to move freight around.
4. Invest in public transport to make sure that it is of good quality, frequent, reliable, punctual, safe and clean but not expensive. Offer interchanges where passengers can easily and quickly transfer between different modes of transport (for example, car/tram, tram/bus). Favour public transport through dedicated bus-lanes, priority at traffic lights and access to areas where cars are restricted.
5. Ensure that pedestrians and cyclists can move safely around your city. Provide car-free areas, safe road crossings, cycle paths and cycle parking facilities.
6. Undertake information campaigns to empower citizens and businesses to reduce their car usage.
7. Exchange information with other cities in Europe — many are or have been in the same situation. You may not have to reinvent the wheel.



Further information and order form

Directorate-General XI is the arm of the European Commission responsible for matters of environment, civil protection and nuclear safety. Units mainly responsible for the issues covered in this brochure are:

Unit D.3 Air quality, transport and urban environment, noise, energy

Unit A.2 Climate change

DG XI produces regular reports and other publications covering the full spectrum of environmental themes. For more information on European Union action to improve our air quality please complete and send or fax the attached form to:

European Commission
 Directorate-General XI
 Unit XI.5 Information and communication
 Rue de la Loi/Wetstraat 200
 B-1049 Brussels
 Fax (32-2) 296 95 60

European environmental information is also available on-line on:

<http://www.europa.eu.int/com/dg11>

Other useful sources of information:

European Environment Agency

Kongens Nytorv 6
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 Fax (45) 33 36 71 99
eea@eea.eu.int
<http://www.eea.eu.int>

Eurostat Datashop

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<http://europa.eu.int/eurostat.html>

Good Practice in Urban Management and Sustainability

<http://europa.eu.int/comm/urban>

ELTIS

European Local Transport Information System

POLIS

C/o Eurocities

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EPOMM

European Platform on Mobility Management

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Car Free Cities

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European Cyclists' Federation

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