



BICYCLE RESEARCH REPORT NO. 12

May 1991

OECD:

ENVIRONMENTAL POLICIES FOR CITIES IN THE 1990s

The Key Facts

The industrialized countries of the OECD have jointly drawn up guidelines on urban policy. These are deliberately designed to affect motor traffic by means of integrated decision-taking on planning and land use, a shift towards more public transport, and a much greater role for walking, cycling and telecommunications.

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The guidelines have been drawn up by the Organization for Economic Cooperation and Development (OECD), comprising the EC countries, Austria, Canada, Iceland, Norway, Sweden, Turkey, the USA, Japan, Finland, Australia and New Zealand, on the assumption that the needs of the present should not be satisfied at the expense of future generations.

Cities and conurbations suffer from environmental problems and the destruction of established districts and historic monuments; from traffic jams, atmospheric pollution, shortage of space and difficulties for people without cars. Traffic also creates global problems. The rising consumption of oil, the most important non-renewable resource, the use of land for cross-country roads, and the high level of atmospheric pollution are the main causes of worldwide global warming. In the Athens area, for example, transport accounts for 86.4% by weight of all airborne pollutants. The social costs of noise pollution by traffic in the whole of the OECD amount to about 0.1% of the gross national product; the figure for accidents is between 2 and 2.4%.

The OECD recommends influencing the public's choice of transport mode, and the integration of planning for transport and land use. This would start a trend away from private towards public transport, and towards the use of alternative modes of transport and communication such as walking, cycling and telecommunications.

Stockholm, Athens and Los Angeles have all set examples worth following. Stockholm has combined restrictions on car use in the city centre with incentives for public transport (Figure 1). In Athens the clean air plan allows only cars with alternately odd or even number plates to enter the city centre (Figure 2). In Los Angeles only diesel buses fitted with anti-pollution devices



will be allowed after 1993, and from the year 2007 there will be a ban on all vehicles with internal combustion engines (Figure 3). The report rejects the continuing trend towards more road-building. Such roads provide only short-term relief and create new long-term problems.

Report "Environmental Policies for Cities in the 1990's" (French title: 'L'environnement urbain: Quelles Politiques pour les années 1990?'. OECD guidelines on urban policy, 18 7 1990, OECD papers, vol 97 90 03 1 (ISBN 92-64-1345-2). Price: FF100. Paris 1990.

Source OECD Publications, 2 rue Andre-Pascal, F-75 775 Paris Cedex 16; OECD Publication and Information Centre, Schedestraße 1, W-5300 BONN 1, Germany, tel. 0228/261 045. Fax 0228/261 104.



Inset 7. Evaluation of the Combination of an Area Licensing Scheme and Different Public Transport Subsidies as Environmental Policy Measures in Stockholm County, Sweden

In recent years, environmental and ecological quality have become important social and political issues in Sweden. The contribution of car traffic to air pollution and its associated negative environmental impacts has long been recognised. On the advice from Sweden's National Environmental Agency, the Swedish parliament set a national goal to reduce emissions of different pollutants, including nitrogen oxides (NO_x), by 30 per cent from the level in 1980 by 1995. As car traffic is the major source of NO_x emission, the translation of the national goal for the transportation sector is the reduction of NO_x emission from traffic by at least 30 per cent by 1995. To achieve this goal, catalytic converters have been introduced and were to be obligatory on gasoline engine passenger cars from 1989. A similar measure, to be implemented in 1991, has been approved for buses and trucks. In the larger metropolitan areas, however, especially in the Stockholm area, the extent of the growth of automobile use offsets the positive effects of the introduction of catalytic converters and hence the national goal cannot be met in these areas.

To check the trend in increased automobile use and its adverse environmental effects especially in inner city areas, among the more politically feasible policy measures discussed was an "Area Licensing Scheme", combined with different public transport subsidy levels. Four different policies were evaluated in this context:

1. A decrease in the public transport fare by 50 per cent;
2. An area licensing scheme around the inner city of Stockholm;
3. An area licensing scheme combined with a public transport fare reduction of 50 per cent;
4. An area licensing scheme combined with a public transport fare increase of 50 per cent.

The area licensing scheme would totally surround the inner city of Stockholm, with approximately 30 checkpoints on the cordon line. Because of the geographical location of Stockholm County, the inner city and the road transport network, through traffic would be exempt from toll payment on certain routes. A toll fee of 25 SK per passenger car per round trip was adopted for analysis, the fee level being based on the achievement of environmental goals.

Each of the transport policy measures was evaluated according to the following criteria:

1. The achievement of the national environmental goal of reduction of NO_x emissions by 30 per cent by 1995;
2. Forecasts of NO_x and CO emissions from car traffic in Stockholm County and the inner city area and a partial estimate of the environmental costs of car emission based on NO_x and CO emission;
3. Changes in the travel pattern by car and public transport in Stockholm County and the inner city;
4. Changes in the amount of vehicle kilometres travelled in Stockholm County and in the inner city;
5. Changes in the estimates of travel time by car and public transport and the average speed on the road network;
6. Estimation of public transport revenue and toll revenue.

The analysis of the policy options against the above criteria concluded that two policy measures satisfy the achievement of the national environmental goal. First, an area licensing scheme combined with a public transport fare reduction of 50 per cent adequately achieves the 30 per cent reduction; and second, an area licensing scheme with no change in the public transport fare almost meets this goal. An area licensing scheme combined with a public transport fare reduction of 50 per cent ranked highest in all the other criteria except for that of combined revenues generated from public transport and tolls but it generates enough revenue to finance the public transport network. An area licensing scheme with no change in the public transport fare produces substantially more revenue and if these revenues were allocated to finance the public transport network (as well as the road network), public transport ridership would further increase as the result of the increase in the level of service of public transport.

The proposed scheme has yet to be implemented but the study indicates that substantial environmental and financial benefits can be obtained in transport management if cordon tolls are implemented in appropriate areas and the revenues generated are used to finance the public transport network rather than the road network alone.



Inset 7. *cont'd*

Summary of evaluation of an area licencing scheme as compared with reference scenario 2000

General comments	Increased traffic flow Decreased car pollution Decreased public transport subsidy Toll revenue	
	Inner city	Country
Trips		
Car trip	-28%	-6%
Public transport trip	+11%	+5%
Car pollution		
CO	-18%	-10%
NO _x	-18%	-10%
Cost	-248 MSKR/year	
Revenue		
Public transport	+117 MSKR/year	
Toll	+800 MSKR/year	
Total	+917 MSKR/year	

Summary of evaluation of an area licencing scheme combined with a public transport fare reduction of 50% as compared with reference scenario 2 000

General comments	Increased traffic flow Decreased car pollution Decreased public transport subsidy Toll revenue	
	Inner city	Country
Trips		
Car trip	-35%	-10%
Public transport trip	+19%	+9%
Car pollution		
CO	-25%	-16%
NO _x	-25%	-16%
Cost	-347 MSKR/year	
Revenue		
Public transport	+665 MSKR/year	
Toll	+717 MSKR/year	
Total	52 MSKR/year	



Inset 8. Packaging of Measures for Air Pollution Abatement from Traffic - The Case of Athens, Greece

The City of Athens is located in the Athens Basin, which is open to the sea in the south and surrounded by a series of mountains on all other sides. The airshed of the basin has a low ventilation potential during the hot season which lasts for almost eight months of the year and, with the inversion effects created by the surrounding mountains, air pollution concentrates within the basin area. Since 1981, emergency measures have been enacted nine times due to excessive levels of air pollution, the primary cause of which is traffic. In addition to increasing numbers of vehicles, other factors which contribute to the increasing amount of air pollution caused by traffic include: the high average age of cars, which is now 11 years; poor maintenance of vehicles; the use of fuel which contains SO₂ and lead above acceptable levels; the inadequate transport network and the small capacity of public transportation; and the low speed of movement because of congestion which increases emissions.

Building on a previous five year plan (1983-1987) for pollution abatement, which did much for reducing air pollution from industry and central heating, but failed to curb the increasing effects of traffic pollution, a new five-year programme with a multiple package of measures was introduced in 1988. The main characteristics of the programme are:

- The creation of ring roads at various distances around Central Athens, where passenger cars and taxis are permitted to enter every other working day (odd - even number plate system). In days of high levels of air pollution, the area of restricted movement is defined by a larger ring;
- Improvement of fuels (reduction of SO₂ in oil fuel by 30 per cent and in diesel by 40 per cent, reduction of lead in gasoline by 62 per cent);
- Introduction of "cleaner technologies" on all vehicles. Provision of incentives to taxis using petrol to adopt the use of unleaded gasoline;
- Operation of the first Vehicle Control Centres for all buses, taxis and passenger cars and inspection of vehicles;
- The construction of two new metro lines in Central Athens and steps to increase the carrying capacity of the one existing metro line by 20 per cent;
- Extension of the trolley bus network, increasing the numbers of trolley buses and the rearrangement of bus lines with the aim of eliminating terminal stations in Central Athens;
- Computerisation of the traffic lighting system;
- The provision of parking garages along the inner and outer ring, combined with public transport stations;
- A gradual shifting of ministries, public corporations and other public services outside of the Central Business District (CBD);
- Application of varied working hours schedule for public administration and commerce by category of activity; and
- The relocation of establishments of national and regional importance (terminals, warehouses, wholesale) in entrance points of the Athens Basin.

Such comprehensive packages are an effective way of integrating the various aspects that contribute to air pollution caused by traffic in urban areas. Once determined, such programmes need to be efficiently and comprehensively implemented to ensure fulfilment of the desired policy goals. Unfortunately, implementation of the programme in Athens is behind schedule and piecemeal. This low achievement is mostly due to:

- The setting of high performance standards by technical consultants which are in reality beyond what can be reached in Greece;
- Executive agencies which are more concerned with political expediency when managing their investment budgets, than with what is required of them by technical documentation; and
- Lack of continuity among officials responsible for implementing policy due to frequent changes in the Greek political system (ministers and their consultants, governors of public corporations, general secretaries, etc.).

Integrated organisational structures, continuity in responsibility for implementation and appropriate financing are also necessary to ensure the success of policy instruments for ameliorating the urban environment.



Insect 9. Airshed Quality Management – The Case of Los Angeles, United States

In early 1989, an extensive three stage programme to improve air quality substantially was adopted for the metropolitan area of Los Angeles, California. The programme's first stage (1989-93) includes tightening restrictions (at a cost of \$2.8 billion per year) on the use of private automobiles and on pollution-causing industrial and household activities. During its second stage (1993-98), all diesel buses, 70 per cent of freight vehicles, and 40 per cent of private automobiles will be required to convert to cleaner fuels, with an additional 50 per cent reduction of industrial and consumer-related emissions. The final stage of the programme anticipates the total prohibition of gasoline fuels in automobiles by the year 2007 – a prohibition that assumes the availability of new, as yet unknown, technologies emerging as viable commercial alternatives to gasoline fueled vehicles. A key to the success of the plan is a "redirection" of development patterns, employment and housing locations, and a substantial reduction in travel from homes to employment centres. This "redirection" must be led co-operatively by communities within the Los Angeles metropolitan area.

For especially significant environmental problems, local governments have the ability and the will to take equally significant corrective actions. While a major incentive for local action may be provided through national standards, the actions themselves cannot be taken by the national government alone. The Los Angeles (South Coast Air Quality District) plan is the most drastic, comprehensive and expensive effort to improve air quality ever drawn up locally in the United States. While specific actions proposed were not mandated by the Federal government, court decisions in response to the region's non compliance with Federal air quality standards were a major factor in the development of the local plan. Implementation of the plan will be a local responsibility.