



BICYCLE RESEARCH REPORT NO. 12

Mai 1991

OECD:

ENVIRONMENTAL POLICIES FOR CITIES IN THE 1990s

Umweltprobleme einigen OECD-Länder gegen den privaten Autoverkehr

Wichtigstes
Ergebnis

Die in der OECD zusammengeschlossenen Industrieländer haben sich auf Leitlinien zur Stadtpolitik geeinigt. Danach soll der motorisierte Verkehr gezielt beeinflusst werden: Durch eine integriert mit der Flächennutzung erfolgende Planung, durch Verlagerungen auf öffentliche Verkehrsmittel, und durch verstärktes Zu-Fuß-Gehen, Radfahren und Telekommunikation.

Zum Inhalt

Die Leitlinien der Organisation für Wirtschaftliche Zusammenarbeit und Entwicklung (OECD), das sind neben den Ländern der Europäischen Gemeinschaften Österreich, Kanada, Island, Norwegen, Schweden, die Türkei, die USA, Japan, Finnland, Australien und Neuseeland, sehen vor, dass gegenwärtige Bedürfnisse nicht zu Lasten künftiger Generationen befriedigt werden.

Städte und Ballungsgebiete leiden unter Umweltproblemen und der Zerstörung gewachsener Stadträume und Kulturdenkmäler. Staus, Luftverschmutzung, Flächenknappheit und Erschwernissen für Personen ohne Autos, sonder auch globale Probleme entstehen durch den Verkehr: der steigende Verbrauch der wichtigsten nicht erneuerbaren Ressource Öl, Landverbrauch für Überlandstrassen, und die hohe Luftverschmutzung als Hauptursache der weltweiten Klimaerwärmung. Im Raum Athen trägt beispielsweise der Transport 86,4% aller Tonnen Luftschadstoffe bei, und die sozialen Kosten des Straßenverkehrslärms in der gesamten OECD betragen etwa 0,1% des Bruttosozialproduktes, die Kosten der Luftverschmutzung etwa 0,4% und die Unfallkosten zwischen 2 und 2,4%.

Empfohlen wird, die Verkehrsmittelwahl zu beeinflussen und Flächennutzung und Verkehr integriert zu planen, um Verlagerungen vom privaten Verkehr zum öffentlichen Verkehr und zu alternativen Verkehrs- und Kommunikationsmitteln, z.B. Zu-Fuß-Gehen, Radfahren und Telekommunikation zu erreichen.

Als vorbildlich gelten Modelle aus Stockholm, Athen und Los Angeles:



Stockholm mit einer Kombination innerstädtischer Kfz-Zulassungsbeschränkungen und Fördermaßnahmen für den öffentlichen Verkehr (Übersicht 1). Der Luftreinhalteplan Athens lässt unter anderem jeweils nur noch Autos mit geraden bzw. ungeraden Kennzeichen ins Zentrum (Übersicht 2). In Los Angeles sind ab 1993 nur noch Dieselmotoren mit Abgasreinigung zugelassen, und ab 2007 Fahrzeuge mit Verbrennungsmotor ganz verboten (Übersicht 3). Abgelehnt wird dagegen der in vielen Städten immer noch verbreitete Bau weiterer Straßen. Sie entlasten nur kurz und bringen neue langfristige Probleme.

- Bericht** "Environmental Policies for Cities in the 1990s" (franz.: "L'environnement urbain: Quelles Politiques pour les années 1990?"). Leitlinien der OECD zur Stadtpolitik vom 18.7.1990. OECD-Schriftenreihe, Bd. 97 90 03 1 (ISBN 92-64-1345-2). Preis: FF 100. Paris 1990.
- Bezugsquelle** OECD Publication, 2 rue André-Pascal, F - 75 775 Paris Cedex 16; OECD Publication and Information Centre, Schedestraße 7, W - 5300 Bonn 1, Tel. 0228/216 045. 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 SO 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.