



Guideline **PROMOTION OF PUBLIC TRANSPORT**

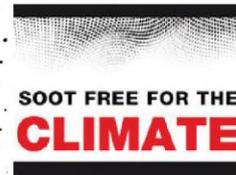
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Public transport emits about four times less pollution than cars. Electrically powered trams, trolleybuses and local trains have no local emissions at all and virtually no CO₂-emissions if powered by renewable electricity. After the triumphant advance of private cars until the seventies of the last century had made the cities very car-oriented, a renaissance of public transport began with investments in local trains, tram systems, buses with separate lanes and priority for public transport. This trend will continue. Public transport has the biggest potential to become a very sustainable and clean mode of transport that provides mobility for all citizens.

Development of the cities was driven by transport systems as they emerged near waterways and railway lines. Since the fifties, mass motorisation transformed European cities: Urban sprawl caused immense commuter traffic, deepened the separation of home and work, and led to high levels of pollution which again increased flight to the green suburbs: A vicious circle.

In the seventies and eighties, smog problems resulting from emissions of cars and industry led to high and visible pollution and many deaths. Ozone problems in the nineties and inability to meet limit values of fine dust (PM₁₀) since 2005 and nitrogen dioxide (NO₂) since 2010 have helped to make public transport again a central issue for environmental concerns.



Comparison of emissions

A policy of modal shift to public transport not only leads to reduced space consumption in urban areas and regained public spaces for the citizens but also to reduced emissions. Switching from cars to buses, local trains and trams – with occupancy rates of 20-25% - halves CO₂-emissions. Carbon monoxide emissions are reduced by a factor of 10 to 50, volatile organic compounds by a factor of 5 to 15, or even reduced to zero. The reduction of NO₂ and particulate matter (PM) depends on the use of diesel engines and particulate filters. Therefore the responsible municipalities must pursue a strategy of retrofitting trains and buses or switch to renewable energies. Increasing occupancy rates through target-oriented marketing measures is another smart and cost efficient tool.

- Measure pollution
- Identify polluters (local, regional, ...)
- Propose measures
- Public participation
- Adopt & enforce

Environmental effects

Emission reduction results partially from “cleaning”, i.e. retrofitting, public transport vehicles. Any city with emission problems needs a concept of public procurement for their buses and their vehicle fleet. The second aspect is the reduction of car use in the city and the switch to public transport or to zero emission vehicles such as bicycles. Public transport systems should be embedded in an overarching approach of multimodality and cooperation with cycling, car sharing and other mobility services.

The reduction effect of every car ride substituted by emission-free public transport, is approximately 140 g CO₂, 0.9 g carbon monoxide, 0.17 g VOC, 0.3 g NO₂ and 0.008 g PM per km (cf. Environmental Protection Agency, Germany 2011).

Obstacles to overcome

Public transport suffers most from insufficient financing. Public transport is a task that cannot be tackled by local governments alone. Regional economic interdependences cause the daily streams of commuters into the cities and urban agglomerations. Thus national programmes should be offered to incentivise public transport investment. Without attractive financial opportunities, municipalities will feel overburdened and will not invest in further public transport.

Local levies, charges and fees can be used to promote public transport: the congestion charges in London and Stockholm are reinvested in public transport. Revenues from parking management schemes in Copenhagen and Amsterdam are spent on public transport and create added value by reducing car use.

Cost efficient solutions have to be found: Examples include giving priority to trams instead of constructing new metro lines, using light rail instead of heavy trains, tight schedule coordination between national, regional and local trains and buses. Reducing emissions and noise from public transport is another means to make public transport a role model. And: the more satisfied passengers use public transport the more public and financial support can be mobilised.

Best practice examples

Acceleration of public transport

Zurich became a role model in the 1980's and 90's by implementing its programme to give priority to trams and buses at traffic signals. A “green wave”



(coordinated green phases) for trams and buses reduced the waiting times to zero and accelerated the average speed of public transport over 25 km/h, making it fully competitive with the car. The modal split share of public transport increased to one third of all routes. Redistribution of road and parking space was a supporting pillar for the success of the “Zurich model” as well as the continuing support of the voters for a public transport policy that included restrictions for cars, documented in several referendums. And the voters had previously rejected alternative proposals to construct new roads and subway lines.

Zurich is one of the very few big cities not to have clean air problems. On the contrary: As the share of cars is less than one third, the concentration of PM and NO₂ is far below the EU limit values.

Solving the commuter problem

If you look at routes within cities or in city centres the share of eco-mobility – public transport, cycling and walking – has always been very high. Yet for all big cities, the daily avalanche of cars has been the biggest challenge.

Commuter trains, express-trains and light rail systems have been the most effective methods of reducing the percentage of cars used for the way to work. Some cities prefer radial lines, others prefer ring or tangential lines. But they are only successful if they connect the relevant industry or business with the residential areas.

Copenhagen was very successful in motivating a large share of commuters to move to the city and then commute by bicycle.

Very successful has been the so called “Karlsruhe Model” where trams were modified so they can use existing railway tracks. The advantage: Customers could board the tram in their hometown 25 km away from Karlsruhe , get off directly in the pedestrian zone of the city and go shopping.

Tram renaissance

In the sixties and seventies of the last century and during the triumph of the cars, tramlines in many cities were moved to increase the number and traffic share of private cars. Since the eighties, a renaissance of trams has been underway. They proved to be much more cost efficient than subways, and were faster than and less dependent on traffic congestion than buses.

Many cities in Europe, following the Zurich model, reopened or invested in new tramlines. The French government in particular conducted a tram offensive in many cities, investing in new and very modern trams in Strasbourg, Paris, Lyon and other locations since the 1990s.

Separate bus lanes

Redistributing road space and establishing separate lanes for buses started in Wiesbaden in Germany in 1968. After a change in the Federal Road Traffic Act, it could be implemented in all other German cities. This infrastructure is

Air pollution & Health

In 2010, more than 400,000 people died prematurely in the EU due to air pollution. That makes air pollution the main environmental cause of shortened lives in the EU. The resulting health problems cost society an estimated €330-940 billion per year. Over 90% of the urban population in the EU is exposed to concentrations higher than the limit values recommended by the World Health Organisation (WHO). Among the most important pollutants are black carbon (BC), which is a part of particulate matter (PM), Nitrogen Dioxide (NO₂) and ozone (O₃).



combined with giving priority to buses at traffic signals, making public transport much faster and more attractive. Then, a big push for separate bus lanes that can be opened for cyclists and taxis took place in the 90s and the first decade of the 21st century.

London's introduction of the congestion charge in 2003 and the subsequent reinvestment of the new revenues into improvements of the bus system led to a complete network of bus lanes in inner London.

Attractive fares and tariffs

In 2013, Vienna provided an outstanding example of the effects of fares. Against all odds and against all naysayers, the price of the annual subscription for public transport has been lowered to 365 euros - that's one euro per day. The extra demand caused by this drastic 25% reduction more than compensated the reduced per-ticket revenues.

E-tickets

In Germany, more than 500 firms and more than 10 million people are using e-tickets for public transport. This makes the use of complicated ticket machines unnecessary and reduces barriers for access to and use of public transport.

The same is true for smartphone apps, providing individualized real-time information about public transport facilities in specific places.

Multi- and intermodality

Modern public transport should be embedded into a concept of mobility management that combines all modes of transport and includes car sharing and cycling. Car sharing and taxis are often overlooked branches of public transport. As young people become ever less inclined to see a car of their own as a status symbol, car sharing becomes

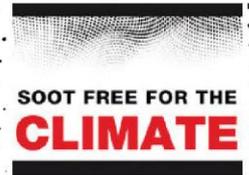
an alternative to private car ownership according to the principle "use rather than own." This tendency is even stronger in urban areas, as car sharing in most cases needs to be backed by a good public transport system.

Public transport should also be combined with the use of bicycles: bicycle transport should be allowed in all trains, every station should offer sufficient bicycle racks or boxes and possibly also bike rental systems.

The "Mobility Points" in Bremen are exemplary. Where, public transport stops match up with car sharing schemes, bike rental, taxis and public phones.

Summed up:

The promotion of public transport (PT) is a very powerful tool for clean air policy. Its ecological advantage becomes even bigger because of the possibility of switching to renewable electricity. PT is well suited as a pillar of sustainable transport and fulfils social, economic and ecological goals. Infrastructure is extremely relevant for good PT, especially the redistribution of road space. The most cost-efficient means to promote PT is traffic prioritisation, leading to higher occupancy rates and higher frequency of service. Fares and tariffs are a central tool for promoting PT. Public support is tremendously important in order to attract more capacity and users. Thus marketing and information are indispensable; equally important is the participation of civil society. Finally PT is an indispensable component in concepts of multimodality.



CONTACT

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ABOUT US

Clean Air is a project by nine European environmental organisations that fight for clean air in European cities. Despite the existing legislative framework and the citizens' right to clean air, continuing violations of air pollution limits remain a problem in many cities. Air pollution threatens health, environment and climate. It's time to take action!

www.cleanair-europe.org

Started in 2009, the associated campaign "Sootfree for the Climate" aims to reduce diesel soot emissions, which accelerate climate change and pose a threat to public health. To this day twelve European NGOs have joined the campaign.

www.sootfreeclimate.org

a project by



project coordination

co-financed by the
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instrument



associated
campaign

