



## 9. INCENTIVE-BASED MEASURES

### Policy summary

Public transport can be subsidized in many ways: supply-side subsidies are channeled to transport suppliers to make up revenue losses and thus reducing fares by a constant percent; while demand-side subsidies are channeled directly to the beneficiaries (both final users and employing businesses) aiming at reducing the users' monetary outlays. Subsidies can be used to make public transport free for some categories of users or during certain periods of the day, or for all the passengers during the whole day. Reduced fares could be introduced depending on the place, time or category of passengers.

By subsidizing public transport, a modal shift is expected from the private car use, with consequent reduction of congestion, air pollution and noise.



### SWOT Analysis

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>Measures to encourage the use of public transport and alternative transport modes</li> <li>Economic benefit for the individual</li> <li>Renewal of the vehicle fleet</li> <li>Reduction of congestion and related issues</li> <li>Public acceptance</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>Use of public funds</li> <li>Efficient public transport required</li> <li>Behavior change closely related to a direct benefit</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>Educational effects</li> <li>Possibility to develop together with LEZ or parking policy to maximize benefits</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>Legislative framework</li> <li>Economic sustainability of the measures</li> </ul>

### Policy topic

- Air pollution or GH gas
- Land-use/urban planning/ landscape
- Traffic noise
- Congestion**
- Traditional fiscal instruments
- Accidents, transport safety
- Public transport subsidies/ support**
- Infrastructure investment
- Users' behaviour**

### Level of application

- National**
- Regional**
- Provincial/Metropolitan area**
- Municipal**

### External costs

- Congestion and scarcity +
- Accidents +
- Air pollution +  
(human health, material damages, nature)
- Noise
- Climate change
- Urban space
- Nature and landscape



## Methodological suggestions

Cost component	External cost	Cost elements	Cost function/ drivers	Suggested estimation techniques	Data needed	Critical valuation issues		
Congestion and scarcity	increase in travel time x value of time x traffic volume	travel time (purpose, mode of transport length for passenger trips, mode of transport and commodity type for freight)	type of infrastructure	WTP/WTA to estimate the value of time in case of congestion	relation speed/flow	speed/flow relation		
		safety	amount and composition of traffic flow		demand elasticity			
		disamenity	kind of network (urban,interurban, metropolitan - n° lanes)		marginal social cost	value of time		
				depreciation	capacity level over time	WTP to estimate costs due to scarcity	level of traffic	opportunity cost
				additional fuel costs				
				environmental costs	cost increases marginally with traffic and depending on the situation (time-place)		capacity	
				direct and induced delay				
opportunity cost								
Accidents	material damages, administrative and medical costs, production losses and estimation of costs induced on friends/ relatives	medical costs	traffic volume	WTP/WTA to estimate the value of statistical life	database of accidents and of their outcomes (heavy/slight injuries, fatalities ... )	value of human life		
			risk attitude					
		loss of productivity	type of infrastructure	resource cost for health improvement		externalities		
			speed distribution					
loss of human life	day/night							
	weather							
Air pollution	damages to buildings	damages to buildings	traffic level	repair cost	emission data per kind of pollutant	damages quantification		
		damages to agriculture	location - exposure		vehicle mix			
		damages to human health	population and settlement density		network data			
		damages to ecosystems	kind of engine - alimentation					
			driver characteristics					

## Recommendations / Comments

Technical feasibility	Easy	Public acceptance	Medium	Equity	Yes
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Incentive-based measures are a family of non technical options to reduce the emissions and impacts of traffic and transportation. In the economic context, every measure is designed to comply specific targets. Depending on the type of measure and policy, the targets are referred to different spatial and temporal contexts. The choice for the level of subsidies in public transport is of course a political fact and hence cannot be developed exclusively on the basis of scientific research and technical facts. Moreover, it is clear that the introduction of a strongly subsidized transport solution for users is in accordance with the equity argument to prevent social exclusion; on the other hand it has considerable disadvantages because of rebound effects that make the environmental effects less attractive than expected. There are, however, good arguments for free public transport (or strongly reduced fares) for specific groups of users such as students and the elderly, especially when this is restricted to off-peak periods. Full suppression or inadequacy of subsidies may have dramatic impacts on level of service of public transport. In particular, in urban and regional transport a considerable decline of service may be expected. Moreover, fares will increase. Subsidy reduction contributes to the social exclusion of low income groups that have no travel alternatives. Generally, the impacts of subsidy reduction depend on the strategy of the public transport operators in achieving financial break even. If they focus on cost reduction and high profits, the negative effects are expected to be larger than if they focus on providing a high service level in order to attract more users.

## Related Good Practices

- Employer-subsidized commuter ticket, FI
- Hasselt zero-fare public transport policy

