



## 3. PARKING REGULATION AND PRICING

### Policy summary

Efficient parking pricing can provide numerous benefits including increased turnover (parking offer) and therefore users' utility, reduced traffic volumes (erratic parking search) and increased revenues. A direct pricing of parking facilities is widely recommended. Several studies in literature and policy analysis support and provide justification for parking pricing, including increased urbanization costs, increased concern about car traffic external costs (congestion, accidents, pollution) and the need of differentiated parking regulation according to accessibility and scarcity of street spaces in relation to parking demand. Developments in tolling technologies and devices are then improving the operability of park pricing schemes.

On-road parking management (paid parking zones, limitation of parking durations, residents' parking privilege, environment oriented parking fees, etc.) can help to tackle traffic congestions by reducing the demand for travel into the encompassed area. Two complementary approaches can be adopted: physical limits on the available parking spaces (accompanied or not by special measures as preferential treatment for residents and special categories, i.e. high-occupancy vehicles) and increases in parking costs. Parking regulation and pricing can induce an impact on users behaviour, who could chose other modes of transport, change their travel path or shorten the stay, thus reducing congestion and/or air pollutants emissions. Distortions such as illegal parking and mileage increase due to parking search are to be avoided. Finally, the parking control and enforcement system is the key factor in the success of this policy.



### 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

### SWOT Analysis

#### Strengths

- Possibility to collect revenues
- Suitable to both the city centre and the neighbouring districts; effective management of parking spaces in residential/commercial areas
- Fees segmentation as flexible tool to manage the motorized approach to city centres and the different parking scarcity/demand conditions
- Possibility to affect parking duration (e.g. progressive pricing)
- Reduction of environmental impacts in the regulated areas

#### Weaknesses

- Possible need to define exemptions for some vehicles and citizens categories
- Difficult connection/adaptation to traffic dynamics
- Necessity of side measures
- Difficulty of application on motorbikes
- Would benefit of proper spatial planning
- Need of a comprehensive approach to avoid just shifting the problems to other part of the city (e.g. congestion, pollution)

#### Opportunities

- Association with inter-modal measures such as park-and-ride, (electric) car sharing, bike sharing
- Targeted investment of revenues
- Encourages modal shift;
- Possibility to promote cleaner vehicles (exemptions or reduced fees)
- Improvement in urban quality; possibility to free street spaces for different uses/users
- Redistribution of traffic flows

#### Threats

- Unbalancies/inconsistencies between regulation in different areas of the same city;
- Differences between regulations among cities in the same region and possible misperception/ misbehaviour by users
- Difficult communication/perception of the spatial pricing differentiation along the urban road network (signalling system)
- Lobbying by some targeted categories

### 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





# ECOTALE GUIDELINES

## 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
		depreciation	capacity level over time		level of traffic	
		additional fuel costs		WTP to estimate costs due to scarcity		opportunity cost
		environmental costs	cost increased marginally with traffic and depending on the situation (time-place)		capacity	
		direct and induced delay				
		opportunity cost				
Air pollution	"Air pollution costs are caused by the emission of particulate matter (PM), NOx, SO <sub>2</sub> and VOC. Air pollution costs arise also from industry, agriculture and private households."	damages to buildings	traffic level	repair cost	emission data per kind of pollutant	damages quantification
		damages to agriculture	location - exposure		vehicle mix	
			population and settlement density			
		damages to human health	kind of engine - alimentation		network data	
damages to ecosystems	driver characteristics					
Urban space	"Motorised traffic in urban areas has different effects on non-motorised traffic participants (pedestrians, cyclists, etc)."	separation costs for pedestrians	type of infrastructure	to estimate damages to pedestrian traffic, the additional waiting time is to be measured	infrastructure network in urban areas database	evaluation process
		costs due to scarcity	level of traffic	compensation cost approach to compute scarcity		
	decency increase/decrease					

## Recommendations / Comments

Technical feasibility	Easy	Public acceptance	Medium	Equity	Partial
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The nature and magnitude of benefits depend on the scale of implementation. At a neighborhood scale, an effective parking pricing policy reduces local impacts. If widely implemented throughout a district or region, it can significantly reduce traffic congestion, energy waste and pollution emissions. One of the most important aspects of parking pricing policy is to define the correct fee. In general, efficient and equitable parking prices are set to equal marginal costs, except if a subsidy is specifically justified or required, for example, to achieve equity or strategic development objectives (i.e. development of mixed public-private project financing). Net revenues can be invested in different ways (to cover direct costs, to finance public transit, to reduce general taxes...) and this can affect the global effectiveness of the system, in particular when costs are mainly absorbed by administration and equipment. Moreover, paying for parking can be inconvenient, particularly with older devices that only accept specific coins and require motorists to prepay for a limited time period. The adoption of new technologies is strongly recommended, in order to offer a wide range of flexible payment options. Users (and motorists) may park illegally, or cause parking congestion problems on nearby streets where parking is unpriced; this can be partially addressed by improving parking regulations, user information and enforcement. Finally, equity problems can rise, because a given parking fee represents a greater share of income to a lower-income motorist than a higher-income motorist..

## Related Good Practices

- Parking Area Policy of the City of Vienna
- Helsinki comprehensive parking policy
- P&R network controlled by guidance system
- Parking policy in the city of Luxembourg
- Paid Parking Zone (Poznan)

