



# ECOTALE GUIDELINES

## 10. ENVIRONMENTAL TAXES / CHARGES

### Policy summary

Charging policies such as environmentally related taxes on vehicle or fuel can be applied to take into account vehicles' CO<sub>2</sub> emissions performance and vehicles' cylinder capacity and emissions according to Euro standards, with higher rates for diesel powered vehicles (in particular heavy good vehicles) and for those without particle filters. These taxation measures can be accompanied by opposite incentive policies promoting environment-friendly alternative transport options.

To be effective, taxation policies should adequately reflect environment externalities, while the revenues raised may be used to reduce or compensate the external costs.

They are expected to promote the production and sale of more energy-friendly vehicles, to reduce the volume of car traffic, to increase and improve public transport, to reduce overall energy consumption and air pollution.



### SWOT Analysis

#### Strengths

- Reduction of polluting emissions
- Reduction of fossil fuels use
- Revenues

#### Weaknesses

- Exemptions reduce the effectiveness of the policies

#### Opportunities

- To push the industry to seek technological solutions in order to avoid the release of surplus CO<sub>2</sub>
- Induce consumers to buy less polluting vehicles
- To encourage a more efficient use of HGVs
- To encourage modal shift

#### Threats

- Legislative framework
- Public perception and acceptance

### 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





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## Methodological suggestions

Cost component	External cost	Cost elements	Cost function/ drivers	Suggested estimation techniques	Data needed	Critical valuation issues		
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			
		damages to human health	population and settlement density		network data			
		damages to ecosystems	kind of engine - alimentation driver characteristics					
Noise	Noise can be defined as the unwanted sound that causes physiological or psychological harm to humans. It is recommended to take vulnerable groups, like children and elderly, into account.	annoyance	the annoyance depends on the traffic level	WTP hedonic price for noise reduction	noise exposure data	noise indicator		
		effect on health	resident population and density			evaluation of annoyance		
		property value loss	noise indicator time of exposure					
Climate change	Climate change is a long term and global risk. A differentiated approach (looking both at the damages and the avoidance strategy) is necessary. In addition long term risks should be included. Impacts of transport are mainly caused by emissions of the greenhouse gases CO <sub>2</sub> , N <sub>2</sub> O, CH <sub>4</sub> .	preventive measures	emission level dependent on traffic level and kind of propellant	avoidance cost approach or damage cost approach	emission data per kind of pollutant	trend pollution/ altitude		
		damages induced by climate change (rise of temperature, rainstorms, tornados...)	type of vehicle and equipment in use			speed	driving style	damages quantification over time

## Recommendations / Comments

Technical feasibility	Easy	Public acceptance	Difficult	Equity	Poor
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Environmental policy uses a range of instruments that induces behavioural change in transportation stakeholders, aiming at reducing environmental pressures and damages. Taxes on input and output transportation process - also known as Eco-taxes - are one such instrument that internalise the negative externalities in decision making by producers (transport suppliers) and consumers (travellers/customers). An Ecotax is a market-based instrument, which sets a price to the 'latent' or 'unpaid' factor of production, trying to translate the polluter-pays-principle in practice. The most common example of this measure in the context of transport is discouraging consumers to use (and purchase) polluting vehicles or fuels. Taxes on polluting inputs are generally effective when there is a clear and direct connection between pollution source and environmental damages. Generally speaking, environmental taxation should attempt to improve the market efficiency of the environmental goods and services by imposing a price on such goods equal to the marginal costs of their use: only if policy makers are able to calculate these costs, environmental taxation is inherently effective, providing no other distortions and imperfections in the relevant markets. The three expected effects of an environmental tax are: cost covering (as every fiscal instrument); incentive effects and revenue raising. Consequently, evaluating the effectiveness of this type of instruments involves not only the measure of environmental effects, but also the comparison between the tax rate and the cost of pollution reduction.

## Related Good Practices

- CO<sub>2</sub> tax N
- Eco-tax on HGVs
- The Kyoto cent
- Vehicle tax PL

