

## EXTERNAL COSTS RELATED TO PASSENGER TRANSPORT AND FREIGHT TRANSPORT

TRANS 7

The transport of people and freight is accompanied by pressures and impacts on the environment and human health. Some of these have effects on society as a whole and yet are not subject to any financial compensation: they are external effects associated with external costs.

*The data come from a study carried out in 2010<sup>1</sup> and have been updated for the year 2011<sup>2</sup> on the basis of various criteria integrating technological developments, the strengthening of environmental standards and changes in private consumption. Given the difficulties involved in estimating external costs, these figures should be considered as orders of magnitude rather than precise values.*

### All modes of motorised transport are implicated

The pressures and impacts related to the transport of people and freight are very diverse: air pollution, greenhouse gas (GHG) emissions, noise pollution, fragmentation of the territory, accidents, congestion, etc. They are not limited to road transport, all modes of transport are implicated to varying degrees.

### A distorted market

In terms of transport, overall demand and modal choices depend in particular on the prices offered to users. In these circumstances, the failure to take external costs into account in setting these prices leads to over-consumption of transport and an increase in traffic, and it gives a competitive advantage relative to the most impacting modes of transport (with the highest external costs). A possible approach to implementing more sustainable mobility is to assign a monetary value to the external costs of transport activities. In practice, such a process is not straightforward. It is particularly difficult to accurately identify, measure and monetize the various types of damage incurred, which may or may not be immediate, or which

may be contested. A series of external unit costs (orders of magnitude) could nevertheless be estimated for Wallonia. Overall, total external costs are higher for road transport (cars, trucks) than for other modes of transport. In addition, some external costs have significant spatial and temporal features. For example, the cost of noise pollution related to the journey of a bus can vary from 0.07 to 6.95 €/pass-km<sup>1</sup> depending on whether it travels during the day in rural areas or at night in urban areas.

### A contrasted evolution of the costs

According to a recent study<sup>3</sup> designed to assess the evolution of certain external costs for Belgium by 2030, the evolution of regulations (successive EURO standards) and the development of a vehicle fleet with alternative engines would make it possible to reduce overall the marginal external costs<sup>4</sup> linked to emissions. However, the increasing trend in transport demand would not make it possible for these technological advances to reduce total SO<sub>2</sub> and GHG emissions. A significant reduction in pressures on the environment can therefore only be achieved by a significant drop in traffic and a shift in demand to the least impactful modes of transport.

<sup>[1]</sup> CIEM, 2010 | <sup>[2]</sup> SPW - DG02 - DSM calculations based on assumptions developed by CIEM | <sup>[3]</sup> FPB & FPS Mobility and Transport, 2015 | <sup>[4]</sup> External costs per additional unit (pass-km or t-km)

Tab. TRANS 7-1 External unit costs for the various modes of transport in Wallonia (estimates)\*

	PASSENGER TRANSPORT (€/pass-km)				FREIGHT TRANSPORT (€/t-km)			
	ROAD			TRAIN	ROAD		TRAIN	INLAND NAVIGATION
	CAR	BUS/COACH	MOTOR CYCLE		LIGHT COMMERCIAL VEHICLE	TRUCK		
Climate change	0.30 - 2.11	0.14 - 1.00	0.21 - 1.40	0.11 - 0.77	0.98 - 6.89	0.22 - 1.54	0.06 - 0.39	0.07 - 0.53
Air pollution	0.36 - 1.01	0.17 - 0.48	0.41 - 1.15	N/A	1.55 - 4.39	0.49 - 1.34	N/A	N/A
Noise pollution	0.59	0.15	1.92	0.44	3.65	0.55	0.36	0.00
Use of space	0.41	0.10	0.30	0.09	1.54	0.29	0.04	0.12
Accidents	3.91	0.30	23.90	0.11	4.43	0.61	0.00	0.00
Congestion	11.45 - 35.37	0.60 - 1.83	N/A	0.22	21.09 - 65.18	2.10 - 6.52	0.05	0.00

N/A = not available

\* CIEM data (2010) updated for the year 2011 on the basis of various criteria integrating technological developments, the strengthening of environmental standards and changes in private consumption (SPW - DG02 - DSM calculations, based on assumptions developed by CIEM). It should be noted that some external costs have significant spatial and temporal features.