



Light and SAfe Car Charter (LISA)

Spring 2014

Whereas

1. Transport, cars and CO₂ emissions

Cars and light utility vehicles (or vans) are responsible for 13.5% of all CO₂ emissions in the European Union. Between 1990 and 2010, CO₂ emissions from land transport (of which 96% are attributable to road transport and about two thirds to cars) have gone up by 21% in Europe and 33.6% in Belgium.

Recital 3 of Regulation (EC) N° 443/2009¹ stipulates that: *“If the climate change impact of road transport continues to increase, it will significantly undermine reductions made by other sectors to combat climate change.”*

2. Transport and road accident victims

The number of road accidents in Europe, which has decreased steadily during the last two decades, still remains unacceptable, with 28,136 fatalities (EU27) in 2012². That same year, there were 1,340,000 injuries on European roads. With 767 fatalities in 2012, Belgium ranks fourteenth in Europe in the number of road traffic victims. This loss of life cannot be considered as the status quo and must be fought on every front.

The main measures that have been, and continue to be used in the fight for road safety concern improving (1) driving behaviour, (2) infrastructure and facilities (3) the passive and active safety of cars.

3. Function and operation of a car

The primary function of a modern motor vehicle is to transport one to nine passengers on a road network without them having to make any physical effort, at speeds of few dozen kilometres per hour.

The drivers are required to comply with the Highway Code, and in particular to stay within the maximum speed limits, which depend on the road network.

The maximum speed limits on motorways in Europe are 120 km/h or 130 km/h, with the exception of about half the German motorway network, where there is no permanent speed limit.

4. Car manufacturing

Automobile manufacturers must comply with product standards (particularly with regards to safety and the environment) defined at European level.

¹ Regulation (EC) N° 443/2009 of the European Parliament and of the Council of 23 April 2009 setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO₂ emissions from light-duty vehicles.

² European Commission: Road safety statistics, http://ec.europa.eu/transport/road_safety/specialist/statistics/index_en.htm



The mass (or weight), power and top speed of new cars sold in Europe have increased very significantly in the last few decades. This trend continues, as can be seen by the increase of these three variables in the first ten years of this century. Their values were 1372 kg, 84 kW and 185 km/h in 2010 compared with 1268 kg, 74 kW and 180 km/h in 2001³.

Weight, power and maximum speed are closely related: when the latter increases, weight must be increased (reinforcement of the vehicle glider, soundproofing, etc) as must the power (to preserve the same dynamic behaviour).

Vehicles with a “square front” profile, inspired by SUVs and other four-wheel drive vehicles, have increased extensively since the end of the 20th century.

5. Relationship between design and the environment

These four parameters (weight, power, maximum speed and front) have an impact on fuel consumption – and therefore on CO₂ emissions, which are directly proportional.⁴ The heavier the vehicle, the more energy it will need to move. Fuel consumption increases almost linearly with the weight of the vehicle. Moreover, a car with an engine that is optimised to reach 250 km/h emits more CO₂ per kilometre than a less fast car, even at the speeds authorised by the Highway Code. Finally, a “square,” less aerodynamic profile, also induces higher energy consumption.

6. Relationship between design and safety

The weight and the maximum speed are decisive factors for road safety: there is a clear relationship between the maximum kinetic energy of a vehicle ($1/2 m v_{\max}^2$) and its “dangerousness.”⁵

Vehicles with a “square front” profile cause the greatest damage to others in the event of collision, particularly with pedestrians or cyclists.

The increase of weight, power and maximum speed of vehicles as well as the trend towards more “square front” profiles reduces the benefit of improvements made to the active safety of vehicles.

7. Relationship between design and behaviour

The developments described in the previous paragraph can lead to dangerous behaviour. This can result from a false feeling of safety and the loss of sensation of speed (associated with the “comfort” provided by heavy vehicles.) It can also arise from the desire to exploit the dynamic potential of the vehicle or the feeling of invulnerability that can be generated from driving a SUV or four-wheel drive vehicle.

8. Feasibility of limiting the speed, weight, power and design of the front

The maximum speed of trucks is limited. This measure is not extended to vans (light utility vehicles) and cars strictly because of commercial reasons.

Motor vehicles and their components are subject to numerous product standards.⁶ The weight, power, and maximum speed of cars could be limited under similar standards, as could the characteristics of their front side.

³ Source: ICCT, European vehicle market statistics - pocketbook 2012

⁴ The combustion of a litre of petrol releases 2.36 kg CO₂; that of a litre of diesel 2.63 kg

⁵ See the analysis carried out under the “citizen car” project: <http://www.voiturecitoyenne.fr/index.php>



Resolution

The signatories of this LISA Car Charter

Consider the reduction of greenhouse gas emissions and of the number of road fatalities to be two major priorities of the transport sector.

Highlight, to that end, the need to reduce the weight, power and top speed of cars as well as the ‘aggressiveness’ of their front side.

Support, accordingly, the LISA Car concept as defined here. A LISA Car is a car whose weight, power, top speed and front side design are optimised to limit their dangerousness and CO₂ emissions while providing transport for one to nine persons on the road network at speeds of a few dozen kilometres per hour.

Consider that, by 2030, all (100%) of new cars sold in Europe should meet this definition, with the exception of vehicles intended for professional use that require specific characteristics.

Affirm that only a strict regulatory framework is capable of guaranteeing that this objective will be achieved.

Call on the European Commission to broach this matter as a matter of urgency and to propose a bill within two years maximum establishing the LISA Car concept and its restrictive character.

Call on political and administrative officials, at all levels of power, to relay this demand to the European Commission.

Point out that certain motor vehicles currently on the market meet the definition of the LISA Car concept in whole or in part.

Call on political, administrative and private sector officials to promote the use of this type of vehicles among the population and the fleets of companies or administrative authorities.

Undertake to make every effort, in accordance with their competences and means, to ensure a positive response to these demands.

⁶ Cf. e.g. Annex IV of Directive 2007/46/EC of the European Parliament and of the Council establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles.