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TRANSPORT



In 2008, the transport sector employed 844,000 people (4.2% of the total). Over 1990–2008, the number of jobs in the sector rose by almost 42%. This growth was continual from 1994 until 2007, when employment peaked at 890,000. The number of jobs then fell in 2008 to 5.2% below the previous year's figure.

Directive 2009/28/EC of 23 April, on the promotion of the use of energy from renewable sources, sets mandatory national targets for the share of energy derived from renewable sources in transport. In addition, it stipulates that the Community and the Member States should strive to reduce total energy consumption in transport and increase the sector's energy efficiency. The principal means of reducing energy consumption include transport planning, supporting public transport, increasing electric vehicle production, and manufacturing vehicles that are more energy efficient and are smaller both in size and engine capacity.

For its part, the Ministry of Public Works, through the Spanish Airports Authority (AENA), has launched an Environmental Action Plan to reduce noise and CO₂ emissions at airports. It comprises a set of measures to reduce the effects of these facilities on the environment and nearby populations. These



measures are intended to reduce annual fuel consumption by 25,000 tonnes and to cut annual CO₂ emissions by 75,000 tonnes.

During 2009, a number of actions were carried out within the framework of the plan to soundproof the airports managed by AENA to ensure compliance with the existing regulations governing noise levels in the interior of houses and buildings exposed to airport noise.

INDICATOR	GOAL	TREND
Total inter-city transport volume: modal split	Achieve a balance between transport modes, promoting more environmentally friendly options	2008 was the first year to record a slight drop in demand for transport
Emissions of air pollutants by transport	Reduce emissions of air pollutants and contribute to meeting environmental targets	Decrease in emissions of ozone precursors and acidifying gases by transport. In 2008, GHG emissions also fell
Air transport	Achieve a balance between transport modes, promoting more environmentally friendly options	The decrease in air passenger traffic, which began in 2007, continued
Waste generated by transport: End-of-Life Tyres (ELTs)	Reduce, reuse, recycle and recover ELTs (in that order of priority)	Rise in integrated management of ELTs
Eco-efficiency of transport	Decouple economic growth from the environmental pressure exerted by the sector	In 2008, the links between economic growth and demand for transport, GHG emissions and energy consumption weakened further

This edition does not include the Motorisation and Accident Rate indicator, information about which is available in the yearbooks published by the Directorate-General for Traffic (DGT). Nevertheless, it should be emphasised that during 2009 road accidents caused 1,897 fatalities in Spain. This figure is less than the number of deaths in 1964 and is 13% lower than in 2008. Between 2003 and 2009, the number of road deaths fell by 52.5% and the EU objective of halving the number of people killed between 2001 and 2010 was met a year ahead of schedule.

Between 1990 and 2008, Spain's vehicle fleet grew by 97.3% while the number of fatalities fell by 55.4% and the number of deaths per 100 accidents dropped by 51.4% (in 2008 this figure stood at 3.3 as compared with 6.8 in 1990). If the accident rate is calculated in relation to the number of accidents with victims per thousand vehicles, the decrease over the period in question is slightly higher at 53.5%. These falls confirm widespread adoption of safer driving habits, greater use of seatbelts and a reduction in average driving speeds.

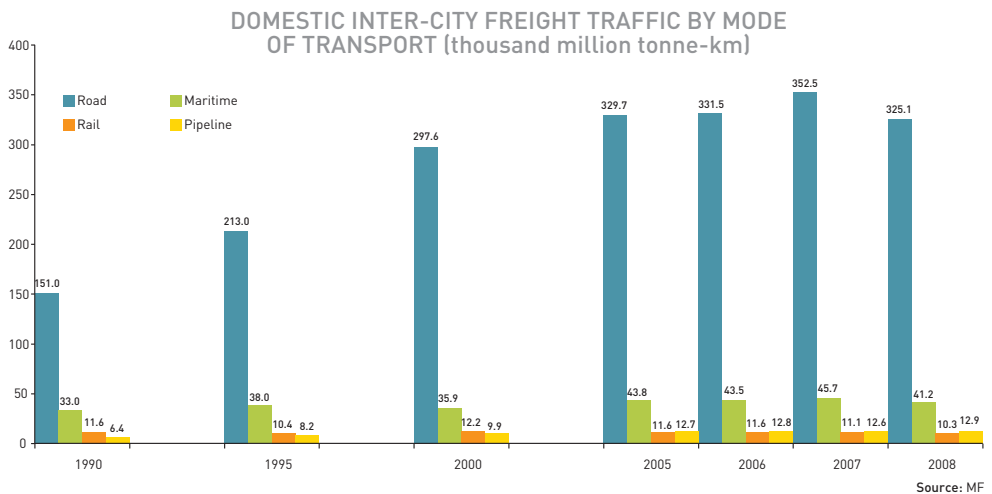
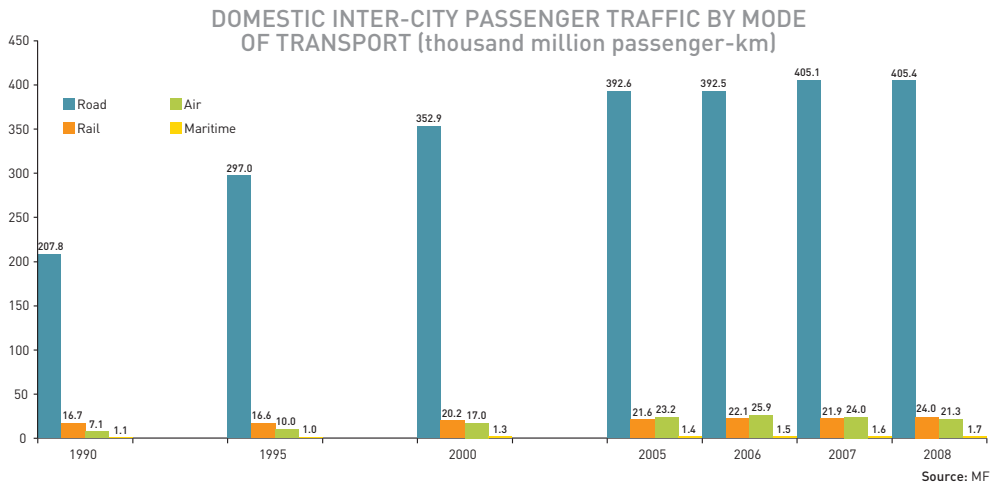
The Biofuel Consumption indicator has also been removed from this year's edition. According to data published by the Strategic Petroleum Product Reserves Corporation (CORES), which reports to the Ministry of Industry, Tourism and Trade, in 2009 demand for vehicle fuel (automobile petrol and diesel) totalled 29.8 million tonnes, 5.2% less than in 2008. Petrol consumption (20.2% of vehicle fuel consumption) was 4.5% less than in 2008. For its part, diesel consumption (79.8% of the total) in 2009 was 5.1% lower than in 2008.

In Spain, in 2008 the composition of the vehicle fleet continued the trend of previous years characterised by a decline in petrol vehicles and an increase in the number of those powered by diesel. In 1998, only 29% of automobiles ran on diesel, whereas in 2008 over 51% used this fuel. This difference is greater in the case of passenger cars, as in 1998 only 21% were diesel-powered, while by 2008 these vehicles accounted for 49% of the total.

In 2009, bioethanol represented 3.93% of average monthly petrol consumption, while that of biodiesel accounted for 4.23% of average monthly automobile diesel consumption. It should be borne in mind that Spain's Renewable Energy Plan (PER) 2005–2010 anticipates biofuels accounting for 5.83% of total fuel consumption by 2010.

Total inter-city transport volume: modal split

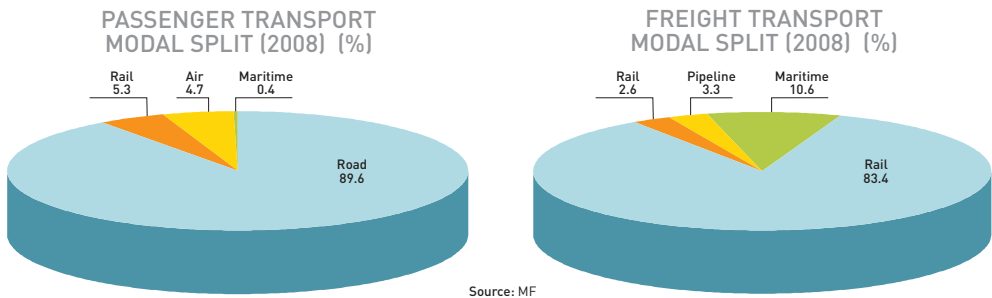
In 2008, passenger and goods traffic fell, the latter by almost 8%. In addition, rail passenger traffic exceeded air travel



Since 1990, internal passenger traffic in Spain has increased by 94.4%. Although growth rates have slowed in recent years, 2008 was the first year to show a slight drop on the previous 12-month period. As regards inter-urban freight traffic, the volume grew over the same period by 86.5%, though it fell by 7.7% in the last year recorded.

By passenger transport mode, between 2007 and 2008 only air traffic decreased (-11.4%). Notably, rail use rose by 9.7% and exceeded air travel (5.3% and 4.7% of the total, respectively). In the case of freight, use of all modes decreased between these two years by 7–10%. The only rise was in pipeline transport, which grew by 2.7%.

The modal split of transport in 2008 underlines the continuing high demand for road transport in Spain. This mode accounts for almost 90% of passenger transport and 83.4% of freight transport. Another noteworthy change was that rail accounted for a larger share of passenger transport than air transport. For its part, air freight was largely irrelevant, since it represented just 0.02% of the total.



In the road-passenger-transport segment, only public transport by bus experienced a slight increase in 2008 (2.2%), while motorcycle use declined sharply and passenger car use fell slightly.

NOTES

- The unit of measurement used for passenger transport is passenger-kilometre (p-km), which is calculated by multiplying the annual number of passengers by the number of kilometres travelled.
- The unit of measurement used for freight transport is tonne-kilometre (t-km), calculated by multiplying the number of tonnes transported by the number of kilometres travelled.

SOURCES

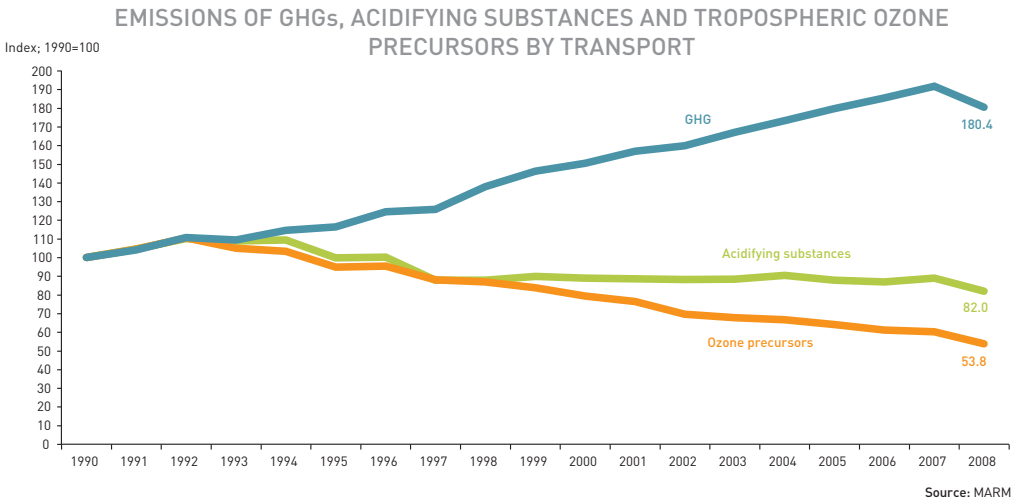
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- MF, 2009. Anuario Estadístico 2008.

FURTHER INFORMATION

- <http://www.marm.es>
- <http://www.fomento.es>
- <http://www.eea.europa.eu/>

Emissions of air pollutants by transport

In 2008, emissions of greenhouse gases, acidifying gases and ozone precursors fell in comparison with 2007



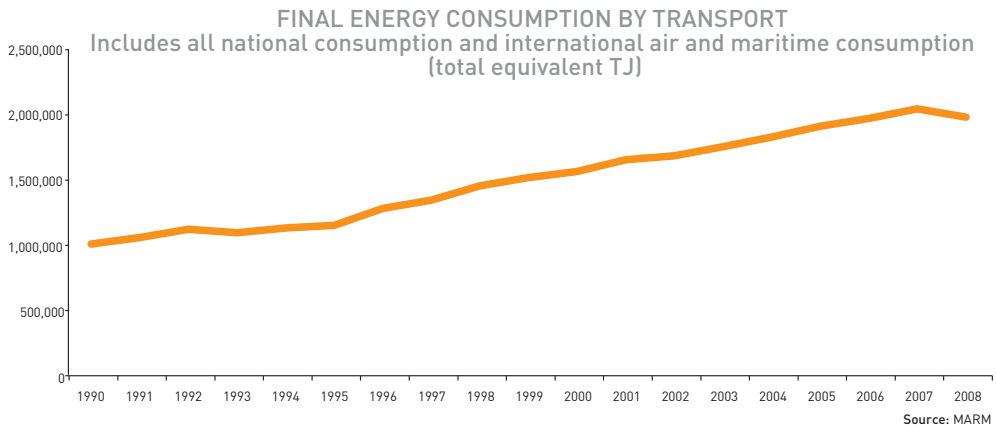
The overall decrease in pollutant emissions also occurred in the transport sector. In 2008, emissions of acidifying substances fell by 7.9% on 2007, while those of ozone precursors dropped by 10.6%. For their part, emissions of greenhouse gases decreased by 6% in comparison with 2007.

The figures for 1990–2008 show a different scenario for each group of pollutant gases. Thus, emissions of ozone precursor gases fell by 46.2%, while those of acidifying substances dropped by 18%. In the case of greenhouse gases, the upward trend that had existed until 2007 was reversed, although the figure for emissions of these gases for the entire period still showed an 80.4% increase.

Similarly, consumption of energy in transport also decreased between 2007 and 2008, in this case by an estimated 3.1%, the largest downturn since 1990. The only other reduction was produced in 1992–1993, although the fall, 2.5%, was slightly lower. In contrast, every other year in the series studied produced increases in consumption. Moreover, some of these were sizeable, such as those that occurred between 1995 and 1996 (11.4%) and 1997 and 1998 (8.4%).

In the breakdown in energy consumption by mode of transport in 2008, road

transport remained the biggest consumer with 65.8% and maintained the trend of previous years. However, maritime transport accounted for the second-biggest percentage (20.9%), overtaking air transport (12.5%), which had previously held second spot. Technological improvements to aircraft (which have increased passenger transport efficiency), together with the decline in demand in 2008 are two of the causes that have contributed to this situation. Rail (0.7%) and pipeline transport (0.1%) consumed the lowest proportions of energy in 2008.



NOTES

- The graph for the indicator shows the changes in aggregate total annual emissions of acidifying and eutrophying substances (SO₂, NO_x and NH₃) and tropospheric ozone precursors (NO_x, NMVOCs, CO and CH₄) in relation to the base year 1990 (1990=100).
- Emissions of acidifying and eutrophying gases are presented as acid equivalent (hydrogen ion-generating potential) and are aggregated using the following weighting factors: 31.25 acid equivalent/kg for SO₂ (2/64 acid equivalent/g), 21.74 acid equivalent/kg for NO_x, expressed as NO₂, (1/46 acid equivalent/g) and 58.82 acid equivalent/kg for NH₃ (1/17 acid equivalent/g). Emissions of tropospheric ozone precursors were estimated using the tropospheric ozone depleting potential (expressed as NMVOC equivalent). The following weighting factors were employed: 1.22 for NO_x, 1.00 for NMVOCs, 0.11 for CO, and 0.014 for CH₄.

SOURCES

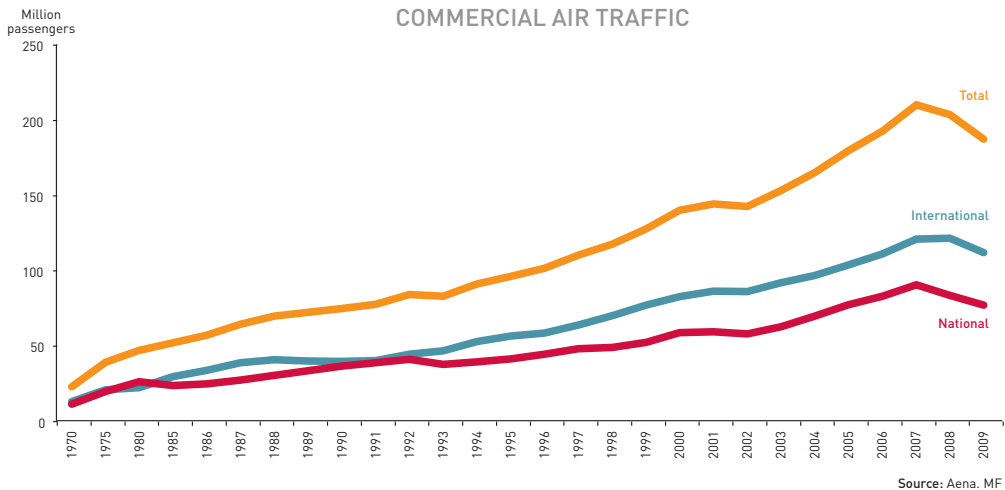
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FURTHER INFORMATION

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- <http://www.eea.europa.eu/>

Air transport

In 2009, air passenger transport fell by 8.1% and freight dropped by 10.3%



In 2009, Spain's airports handled a total of 187,349,814 passengers, 8.1% less than the previous year, in which it had handled 203.8 million. The number of air operations totalled 2,167,605, while cargo traffic stood at 564,734 tonnes, a decrease of about 10% on 2008. Commercial passenger volume also fell (-8.1%) and there was an 8% decrease in the number of both national and international flights.

The highest-ever passenger volume to date was recorded in 2007, when the total figure reached almost 210.5 million passengers (including those in transit), a number that exceeded the 208.5 million passengers on commercial flights (national and international) and does not include passengers in transit. The figure then fell in 2008 and 2009 to the level mentioned above.

The number of operations followed the same vein, in this case peaking at over 2.5 million in 2007 before falling from then on.

In absolute figures, over the period 2000–2009, total passenger traffic increased by nearly 33%, while the number of air operations rose by 17%.

The general downturn in passenger traffic from 2007 onwards affected Spain's airports to differing extents. The airports that recorded the greatest declines in

passenger numbers between 1997 and 2009 were Valencia, Fuerteventura, Tenerife Sur, Barcelona and Lanzarote, all of which saw volumes fall by over 15%.



NOTES

- Total air traffic includes inbound and outbound flights and includes all commercial traffic (both scheduled and charter flights). It includes passengers in transit and other traffic types. Total commercial air traffic is the sum of all national (or internal) and international traffic.

SOURCES

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- <http://www.eea.europa.eu>
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Waste generated by transport: End-of-Life tyres (ELTs)

The volume of appropriately managed ELTs rose by 30% in 2008

WASTE GENERATED BY TRANSPORT: END-OF-LIFE TYRES

	2007			2008			2007-2008
	Signus Ecovalor	TNU	Total	Signus Ecovalor	TNU	Total	TOTAL (%)
Collected (t)	213,542	55,326	268,868	198,347	52,659	251,006	-6.6
Managed (t)	163,570	55,315	217,945	230,408	52,659	283,067	29.9
Reused (t) %	18,035 11.0	7,707 13.9	25,742 11.8	19,072 8.3	13,165 25.0	32,237 11.4	25.2
Recovered (materials) (t) %	123,575 75.5	23,624 42.7	146,259 66.8	132,891 57.7	18,957 36.0	151,848 53.6	3.8
Recovered (energy) (t) %	21,960 13.4	23,984 43.4	45,944 21.0	78,445 34.0	20,537 39.0	98,982 35.0	115.4

Source: Compiled in-house using data provided by the Integrated Management System for End-of-Life Tyres (SIGNUS) (2008), and Tratamiento de Neumáticos Usados, S.L. (TNU) (2009).

In 2008, the quantity of used tyres collected fell by 6.6%, while the amount appropriately managed climbed by 29.9%.

Between 2007 and 2008, material recovery from end-of-life tyres increased by 3.8% while reuse rose by 25.2%. There was a huge increase in energy recovery, which shot up by 115.4% in these two years.

The breakdown in 2008 by management method shows that material recovery was applied to 53.6% of the tonnes handled, while energy recovery accounted for 35% and reuse for 11.4%. This exceeds the targets set for 2008 in the National Integrated Waste Plan (PNIR) 2008–2015 as regards recycling and energy recovery, which establishes quantitative objectives of 50% and 30%, respectively.

NOTES

- Royal Decree 1619/2005, of 30 December, on management of end-of-life tyres, establishes a specific legal framework for tyre production and management and promotes, in the following order, reduction, reuse, recycling and other forms of recovery, with the aim of protecting the environment. It establishes that the integrated management systems, which should be authorised by the regional governments in the autonomous communities in which they operate, should ensure collection of end-of-life tyres and appropriate management. Management of the system should be performed by an administrative body constituted as a legal person on a not-for-profit basis.
- To date, two Integrated Management Systems have been established in Spain — Signus Ecovalor, S.L., legally constituted on 19 May 2005, and Tratamiento de Neumáticos Usados, S.L., legally constituted on 13 July 2006.

SOURCES

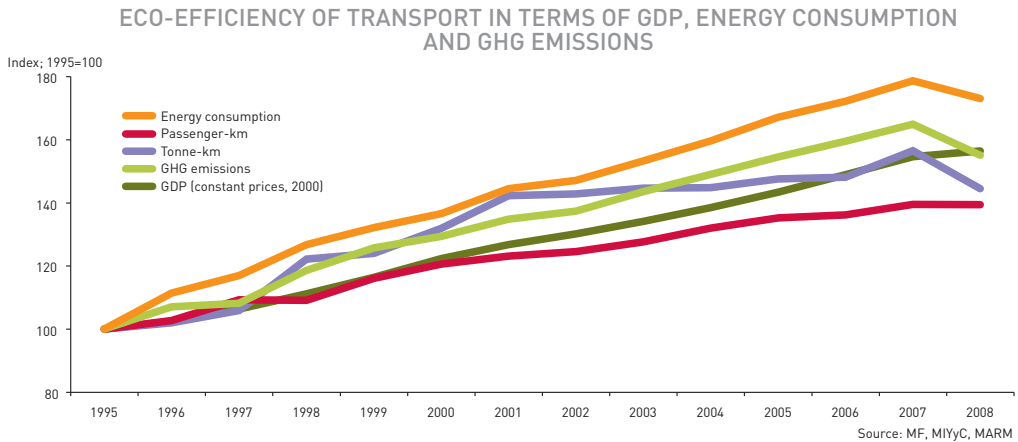
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FURTHER INFORMATION

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- <http://www.signus.es>
- <http://www.tnu.es>

Eco-efficiency of transport

The trend in the majority of variables and their relationship with economic growth changed in 2008



In 2008, GDP growth started to reflect the influence exerted by the global economic and financial crises and the rate of annual growth fell in comparison with previous years. Between 2007 and 2008, GDP at current prices rose by 3.4%. To avoid confusion, it should be underlined that GDP growth in real terms between 2007 and 2008 was 0.9% (measured as chain-linked volume, base year 2000).

Except for freight transport, which showed a change in the trend in place since 2001, the rise in the other variables was very closely linked to GDP at constant prices, although passenger transport had been showing lower annual increments.

The graph shows that economic growth in Spain (56.4% over 1995–2008) was accompanied by lower growth in freight and passenger volumes (44.5% and 39.4%, respectively), by a similar increase in greenhouse gas emissions (55.1%), and by a greater rise in energy consumption (73.3%). In other words, by the end of the period, the growth in economic benefit was greater than the rise in passenger-km and tonne-km, while it was almost equal to the increase in GHG emissions and was lower than the climb in energy consumption.

Detailed analysis of the trends in these pressures leads to a number of reflections. With the exception of 2008, greenhouse gas emissions and energy consumption by the sector rose continually over the period, despite technological improvements to vehicles and increases in their energy efficiency. Aspects such as the growth of the private vehicle fleet and its greater use in urban and metropolitan areas, often with few occupants, may be the cause of this situation.

NOTES

- Greenhouse gas emissions by transport refer to those produced by Group 7 of the SNAP classification (Road Transport), part of Group 8 (Other Transport Modes: rail, air and sea) and pipeline transport included in stationary sources (SNAP 01.05.06). The estimates include emissions of CH₄, N₂O and CO₂. Annual emissions of each of these three pollutants, converted into tonnes of CO₂ equivalent according to their global-warming potential, are as follows: 1 (CO₂), 21 (CH₄) and 310 (N₂O).

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