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Transport performance and energy consumption in road transport 2005 – 2014

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Contents

Abbreviations, measures and symbols

bn = billion (1,000 million)
cf. = confer
DIW = German Institute for Economic Research (Berlin)
EB = energy balance
EEA = Environmental-Economic Accounting
e.g. = exempli gratia
incl. = inclusive
KBA = Federal Motor Transport Authority
km = kilometer
l = litre
LDT = light duty truck
mn = million
NA = National Accounts
PJ = petajoule (10^{15} joules)
t = tonnes
tkm = tonne-kilometre
veh.-km = vehicle-kilometre
yr = year
› = more than
‹ = less than
X = cell blocked for logical reasons
% = per cent

Introduction

The transport sector – especially motorised road transport – is a significant consumer of energy. According to the national energy balance (source: Arbeitsgemeinschaft Energiebilanzen), road transport accounted for 25 % of total final energy consumption in 2014. In the energy balance fuel consumption in road transport is reported in the form of an aggregate. However, precise knowledge of the subsectors of road transport, e.g. by type of vehicles, is essential for both determining the causes of environmental pressures – especially air pollutant and greenhouse gas emissions – and formulating policy measures to limit and reduce environmental burdens.

In Environmental-Economic Accounting (EEA), accounting methods have been developed to systematically link environmental burdens with the economic activities of industries and consumption of households. Here National Accounts (NA) data on domestic output and the final use of goods are used in particular. Detailed EEA results of the use of environmental resources like energy, raw materials and water and of environmental burdens such as air pollutant and greenhouse gas emissions are reported annually in the publication "Economy and Use of Environmental Resources – Tables on Environmental-Economic Accounting" (part 2 comprises data on energy consumption, part 6 on transport and the environment; https://www.destatis.de/DE/Publikationen/Thematisch/UmweltoekonomischeGesamtrechnungen/Querschnitt/UmweltnutzungundWirtschaftTabellenband.html).

The resident concept is used in recording economic activities in National Accounts. According to this concept, the economic performance of resident units is measured. Regarding transport this means that all relevant activities of domestic units, including activities outside the national territory, are included in the accounts.

Due to the close relationship between EEA and NA, the resident concept is also used for road transport in Environmental-Economic Accounting. This refers to accounts of mileage, transport performance and the related fuel consumption of residents.

By contrast, fuel consumption in the national energy balance is related to the domestic territory, regardless of who (residents or non-residents) carries out the refuelling (territorial or domestic concept) [1].

For reasons of consistency with the energy balance, fuel consumption accounts include not only data according to the resident concept, but also so-called 'bridging items' which allow the transition to the domestic concept.

Detailed road transport results are contained in the aforementioned EEA publication.

This report first provides an overview of energy consumption in road transport by type of vehicle and type of fuel for the period 2005 to 2014 (data for reference year 2014 are preliminary). In addition results of energy consumption are presented in a breakdown by group of vehicle keepers (cf. table 2). The next section provides a description of mileage results.

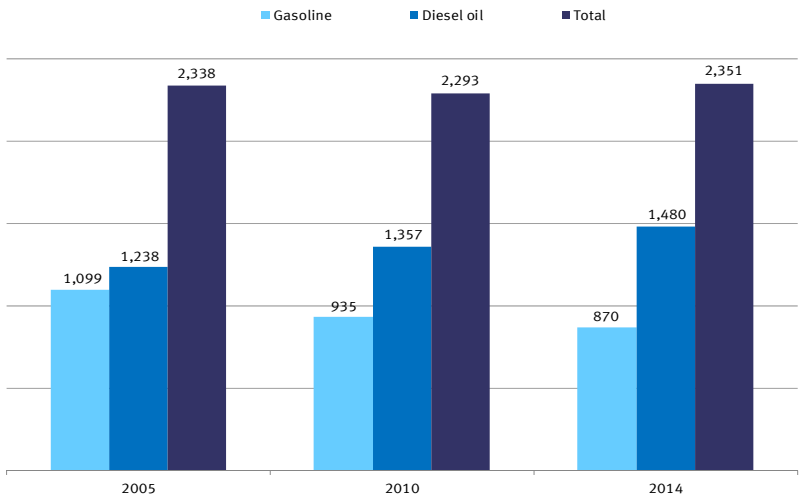
This is followed by a more detailed analysis of the vehicle stock, mileage and fuel consumption of cars and trucks. Finally, transitions between the domestic and the resident concept are demonstrated using trucks as an example.

1 Source for the data in the energy balance: Federal Office for Economic Affairs and Export Control (BAFA): Amtliche Mineralöldaten für die Bundesrepublik Deutschland, Tab. 7: Inlandsablieferungen nach ausgewählten Verwendungssektoren.

1 Energy consumption in road transport

In 2014 road transport, as defined in the energy balance, had a share of 25 % in total final energy consumption. In 2005 the proportion was 23.5 %. Total final energy consumption declined from 9,217 PJ to 8,648 PJ (– 5.3 %) during that period. However, energy consumption in (domestic) road transport increased slightly in absolute terms (+ 0.9 %). In accordance with the resident concept, the 2014 energy consumption in road transport amounted to 2,351 PJ, which was only a slight increase on 2005 (+ 0.6 %) (see table 1). According to the relevant definition, residents' refuelling abroad was taken into account in addition to the domestic refuelling of residents. However, refuelling of non-residents in the domestic territory was not taken into consideration. The reason for the increase in residents' energy consumption being slightly smaller than that of domestic refuelling was that, at the recent end of the series, part of the refuelling of residents abroad was relocated back to the domestic territory. While residents' refuelling abroad increased by a good 5 % between 2005 and 2012, refuelling in the domestic territory was up again between 2012 and 2014 due to shrinking differences in motor fuel prices between Germany and its neighbouring countries. Non-residents, too, refuelled their vehicles again more often in Germany when travelling in or through the country.

Figure 1 **Energy consumption in road transport (resident concept) 2005 – 2014**
Petajoules (PJ)



Different trends were observed for the various types of motor vehicles. Between 2005 and 2014, energy consumption of cars increased by 0.9 % according to the resident concept. In the same period, energy consumption of light duty trucks increased sharply by 23.4 %. An opposite trend was however observed for heavy duty vehicles. Their energy consumption declined markedly (– 5 %) from 2005. A slight decrease in energy consumption (– 2.5 %) was observed for motorbikes, too (cf. table 1).

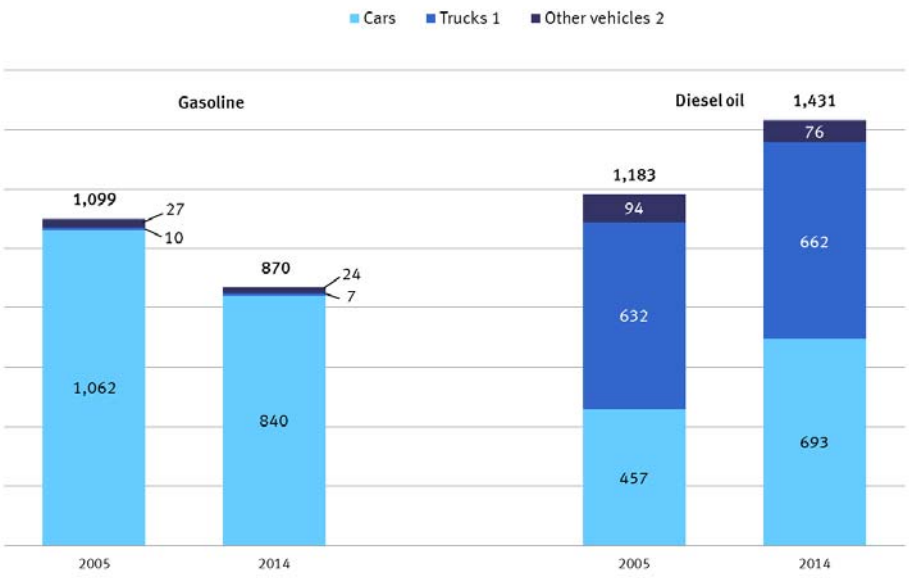
Table 1 **Energy consumption in road transport by vehicle type**

Vehicle type	2005	2012	2013	2014 [1]	2014 on 2005
	Petajoule				%
Cars	**1,519.1**	**1,486.0**	**1,503.2**	**1,533.2**	***0.9***
Gasoline engine	1,062.3	858.5	840.8	839.9	*– 20.9*
Diesel engine	456.8	627.5	662.5	693.4	*51.8*
Motorbikes	22.8	21.5	21.8	22.2	*– 2.5*
LDT [2]	**208.6**	**247.0**	**254.9**	**257.3**	***23.4***
Gasoline engine	*9.9*	6.8	6.6	6.5	*–34.0*
Diesel engine	198.7	240.2	248.3	250.8	*26.2*
Heavy duty vehicles	433.2	420.0	419.5	411.4	*– 5.0*
Heavy duty trucks	202.0	184.5	184.8	183.7	*– 9.1*
Trailer trucks	231.2	235.5	234.6	227.7	*– 1.5*
Buses	37.8	33.9	32.9	33.5	*– 11.3*
Other vehicles [3]	**116.2**	**87.5**	**90.3**	**93.0**	***– 20.0***
Gasoline engine	4.5	1.7	1.6	1.6	*– 65.7*
Diesel engine	111.7	85.8	88.7	91.4	*– 18.1*
Road transport, residents	**2,337.7**	**2,295.9**	**2,322.6**	**2,350.6**	***0.6***
– Refuelling of residents abroad	250.9	263.6	243.1	240.7	*– 4.1*
+ Refuelling of non-residents in the territory	57.6	51.4	55.3	54.5	*– 5.3*
= Road transport in the territory (EB) [4]	**2,144.4**	**2,083.7**	**2,134.8**	**2,164.5**	***0.9***
Total transport (EB) [4,5]	**2,586.2**	**2,558.6**	**2,611.6**	**2,629.0**	***1.7***
Total final energy consumption (EB) [4]	**9,127.4**	**8,918.5**	**8,178.5**	**8,647.9**	***– 5.3***
	% of final energy consumption				
Road transport in the territory (EB) [4]	***23.5***	***23.4***	***23.3***	***25.0***	X
Total transport (EB) [4, 5]	***28.3***	***28.7***	***28.5***	***30.4***	X

Incl. bio-fuels.
1 Priliminary.
2 LDT = Light duty trucks (net load < 3.5 t).
3 Tractors, excavators, police and similar vehicles, mobile homes; from 2006 mobile homes included under cars.
4 EB = energy balance, 2014 preliminary.
5 Road transport, inland waterways transport, railway transport, aviation.

When we look at energy consumption of vehicles by engine type, gasoline (petrol) consumption and diesel oil consumption moved in opposite directions (cf. figure 2). While consumption of petrol (including bioethanol) dropped by almost 21 % from 1,099 PJ (2005) to 870 PJ (2014), consumption of diesel oil (including biodiesel) increased by 21 % from 1,183 PJ (2005) to 1,431 PJ (2014). In 2005 diesel consumption accounted for just over half of total fuel consumption (51.8 %), whereas the relevant share was over 62 % in 2014.

Figure 2 **Energy consumption in road transport by vehicle type 2005 and 2014**
Petajoules (PJ)



1 Gasoline: light duty trucks; diesel oil: trailer trucks, heavy duty trucks and light duty trucks. 2 Motorbikes, tractors, buses, other.

The strong decline in gasoline consumption was mainly due to the smaller quantities consumed by cars (– 20.9 %). By contrast, diesel consumption of cars increased significantly (+ 51.8 %). When we look at all diesel vehicles, in 2005 (heavy duty and light duty) trucks accounted for markedly more than half of total diesel consumption (53.4 %), which was equal to an energy amount of 632 petajoules. Consumption of cars was equal to 457 petajoules. In 2014, however, cars consumed much more diesel oil (693 PJ) than trucks (662 PJ).

Table 2 gives an overview of energy consumption by group of vehicle keepers. It shows that households accounted for more than 86 % and industries for only 13.5 % of energy consumption of cars in 2014. Regarding heavy duty transport (heavy duty trucks, trailer trucks), commercial transport accounted for 67.8 % of energy consumption and other vehicle keepers for the rest. Own-account transport of the manufacturing sector is included here, too.

Table 2 **Energy consumption by vehicle keeper group and vehicle type 2014**

Keeper group	Total	Cars	Heavy duty trucks, trailer trucks	Light duty trucks	Other[1]
	Petajoule				
Agriculture, forestry and fishing	65.6	134	2.9	2.7	58.8
Mining and quarrying	3.0	0.5	1.9	0.4	0.1
Manufacturing	76.7	42.3	15.7	16.9	1.8
Electricity, gas and water supply and waste disposal	63.8	11.6	38.3	10.6	3.3
Construction	53.2	11.1	12.8	27.8	1.5
Wholesale and retail trade; repair of motor vehicles	133.7	39.3	46.1	45.0	3.4
Transport and storage	347.7	16.9	274.4	27.7	28.7
Accomm. and food services/hotels and rest ..	4.0	2.7	0.0	1.1	0.1
Information and communication	28.6	11.7	9.9	5.9	1.1
Financial intermediation, real estate activities and prof., scientific and techn. activities	107.0	64.1	2.8	33.8	6.2
Public administration and defence; compulsory social security	25.6	7.7	0.3	5.5	12.1
Education	1.9	1.2	0.3	0.4	0.1
Health and social work	11.8	9.6	0.1	1.4	0.7
Other services	46.3	22.2	5.9	15.2	3.0
Industries	968.9	242.3	411.4	194.3	120.8
Private households	1,381.8	1,290.9	0.0	63.0	27.8
Industries and private households (resident concept)[2]	2,350.6	1,533,2	411.4	257.3	148.7
Balance of refuelling[3]	– 186.1	– 192.5	– 67.9	– 25.7	0.0
Industries and private households (domestic concept)	2,164.5	1,440.7	343.5	231.7	148.7

Table 2 cont'd **Energy consumption by vehicle operator group and vehicle type 2014**

Keeper group	Total	Cars	Heavy duty trucks, trailer trucks	Light duty trucks	Other[1]
	% of total energy consumption				
Agriculture, forestry and fishing	2.8	0.1	0.7	1.0	39.5
Mining and quarrying	0.1	0.0	0.5	0.2	0.1
Manufacturing	3.3	2.8	3.8	6.6	1.2
Electricity, gas and water supply and waste disposal	2.7	0.8	9.3	4.1	2.2
Construction	2.3	0.7	3.1	10.8	1.0
Wholesale and retail trade; repair of motor vehicles	5.7	2.6	11.2	17.5	2.4
Transport and storage	14.8	1.1	66.7	10.8	19.3
Accomm. and food services/hotels and rest	0.2	0.2	0.0	0.4	0.1
Information and communication	1.2	0.8	2.4	2.3	0.7
Financial intermediation, real estate activities and prof., scientific and techn. Activities	4.6	4.2	0.7	13.1	4.2
Public administration and defence; compulsory social security	1.1	0.5	0.1	2.1	8.1
Education	0.1	0.1	0.1	0.1	0.1
Health and social work	0.5	0.6	0.0	0.5	0.4
Other services	2.0	1.4	1.4	5.9	2.1
Industries	41.2	15.8	100	75.5	81.3
Private households	58.8	84.2	0.0	24.5	18.7
Industries and private households (resident concept)[2]	100	100	100	100	100

Incl. bio-fuels, provisional.

1 Tractors, excavators, police and similar vehicles, mobile homes; from 2006 mobile homes included under cars.
2 Resident concept: incl. refuelling of residents abroad, excl. refuelling of non-residents in the territory.
3 Balance of refuelling: refuelling of non-residents in the territory minus refuelling of residents abroad.

2 Mileage in road transport

Total mileage in road transport according to the resident concept increased by 6.1 % between 2005 and 2014 (cf. table 3). Mileage developed differently for different types of vehicles. Mileage of cars also increased by 6.1 % in the above period. When we look at cars in a breakdown by engine type, mileage shows a trend similar to that of energy consumption: mileage of diesel cars rose sharply by 51.9 %, whereas mileage of gasoline models decreased by 15.7 %. These changes were due to the trend from petrol to diesel vehicle use among vehicle keepers (cf. chapter 3).

Table 3 **Mileage in road transport by vehicle type**

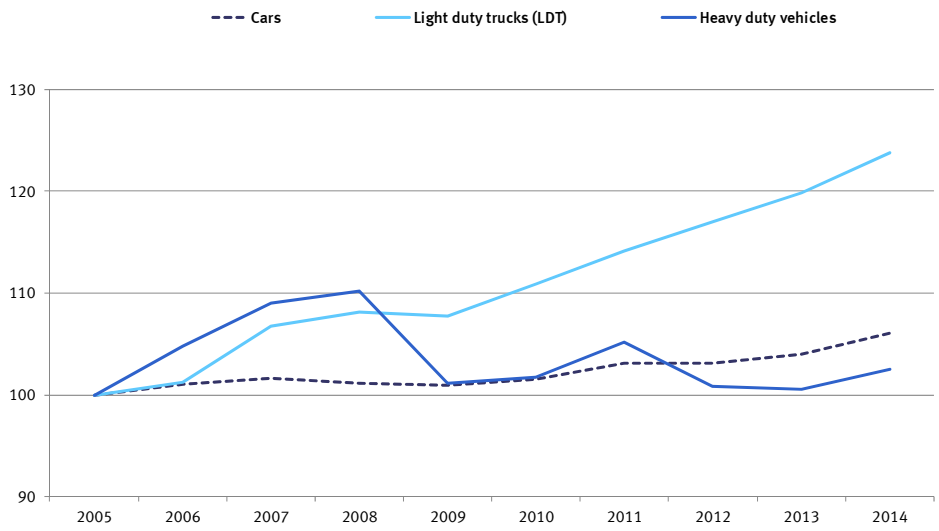
Vehicle type	2005	2012	2013	2014 [1]	2014 on 2005
	bn km				%
Cars	**577.8**	**596.2**	**601.1**	**613.3**	***6.1***
Gasoline engine	391.1	336.5	329.9	329.6	*– 15.7*
Diesel engine	186.7	259.7	271.1	283.7	*51.9*
Motorbikes	17.3	16.9	17.0	17.2	*– 0.4*
LDT [2]	**43.6**	**50.0**	**51.1**	**52.7**	***20.8***
Gasoline engine	2.4	1.8	1.8	1.7	*– 28.9*
Diesel engine	41.2	48.2	49.4	51.0	*23.7*
Heavy duty vehicles	**28.9**	**29.1**	**29.0**	**29.6**	***2.5***
Heavy duty trucks	13.3	12.4	12.4	12.7	*– 4.5*
Trailer trucks	15.5	16.7	16.6	16.8	*8.6*
Buses	3.5	3.3	3.2	3.2	*– 8.2*
Other vehicles [3]	**12.8**	**9.0**	**9.2**	**9.5**	***– 26.2***
Gasoline engine	0.8	0.3	0.2	0.2	*– 71.5*
Diesel engine	12.0	8.7	9.0	9.2	*– 23.2*
Road transport, residents [4]	**683.9**	**704.4**	**710.5**	**725.5**	***6.1***

Incl. mileage achieved with bio-fuels.
1 Preliminary.
2 LDT = light duty trucks (net load ‹ 3.5 t).
3 Tractors, excavators, police and similar vehicles, mobile homes; from 2006 mobile homes included under cars.
4 Resident concept.
Source: German Institute for Economic Research (DIW - Berlin)

Mileage in heavy duty transport increased by 2.5 %. The rise was completely due to the strong increase in mileage of trailer trucks (+ 8.6 %), while other trucks showed a decline of 4.5 %. This development was caused by shifting transports to trailer trucks whose transport volumes are larger and therefore less costly compared to other trucks.

A look at the development of mileage in heavy duty transport over time (cf. figure 3) shows that it increased considerably until 2008 (+ 10.2 % compared with 2005). The economic crisis in 2009 stopped this trend abruptly and led to a drop in mileage (2009 on 2008: – 8.2 %). The 2008 level was not reached again until 2014 (2014 on 2009: + 1.5 %). In contrast, a steady increase was recorded in road freight transport by light duty trucks. Over the whole period, mileage increased by 20.8 %.

Figure 3 **Mileage in road transport by selected vehicle types 2005 – 2014**
2005 = 100



3 Vehicle stock, mileage and fuel consumption of cars

Data on the vehicle stock are collected by the Federal Motor Transport Authority in Germany (KBA). Due to changes in the stock of vehicles registered (cars temporarily taken off the road have not been included since 2007), the number of vehicles recorded in 2014 cannot be directly compared with that of 2005. Therefore, the overall change between 2005 and 2014 indicated in table 4 represents the total of the changes in the subperiods 2005 to 2006 and 2007 to 2014. Between 2005 and 2006 the number of cars was up 1.7 %, while stocks increased markedly by another 6.4 % from 2007 to 2014. Consequently, the increase over the whole period was 8.1 %, which was the result of adding up the proportions for the two subperiods. The increase was exclusively due to the rapidly growing number of diesel cars. The latter was up 47.3 % between 2005 and 2014, while the number of petrol cars fell by 4.1 % in the same period. Actually, vehicle keepers responded to the jump in fuel prices (consumer price index 2000 – 2014: diesel oil prices + 43.5 %, petrol prices + 60.3 %) by buying more fuel-efficient and therefore less costly diesel cars.

Total mileage increased from 577,8 billion kilometres in 2005 to 613.3 billion kilometres in 2014 (+ 6.1 %). In that period, the specific fuel consumption of cars declined due to technical improvements. In 2005 the average fuel consumption of cars was 7.8 litres per 100 vehicle-km, while it amounted to 7.3 litres in 2014. This was a decline of 6.3 %. As a result, total fuel consumption declined slightly (– 0.6 %) despite increased mileage (see table 4).

Table 4 **Vehicle stock, mileage and fuel consumption of cars**

		2005	2010	2013	2014	2014 on 2005
						%
		Total				
Vehicle stock[1]	mn	45.7	41.8	43.3	43.8	*8.1* [2]
Annual mileage	1,000 km/yr	12.7	14.0	13.9	14.0	*– 2.6* [2]
Total mileage	bn km	578.2	587.1	601.1	613.3	*6.1*
Specific consumption	l/100 km	7.8	7.5	7.3	7.3	*– 6.3*
Total consumption	bn l	45.3	43.9	44.2	45.0	*– 0.6*
		Gasoline engine				
Vehicle stock[1]	mn	36.1	30.5	30.1	30.0	*– 4.1* [2]
Annual mileage	1,000 km/yr	10.9	11.4	11.0	11.0	*– 10.5*
Total mileage	bn km	391.4	349.4	329.9	329.6	*– 15.8*
Specific consumption	l/100 km	8.3	7.9	7.8	7.8	*– 6.6*
Total consumption	bn l	32.5	27.7	25.7	25.7	*– 20.9*
		Diesel engine				
Vehicle stock[1]	mn	9.6	11.3	13.2	13.9	*74.3*
Annual mileage	1,000 km/yr	19.5	21.1	20.5	20.5	*– 4.6* [2]
Total mileage	bn km	186.7	237.7	271.1	283.7	*51.9*
Specific consumption	l/100 km	6.8	6.8	6.8	6.8	*– 0.3*
Total consumption	bn l	12.7	16.1	18.4	19.3	*51.4*
		Gasoline engine in % of total				
Vehicle stock[1]	mn	*79.0*	*73.1*	*69.5*	*68.4*	*– 11.6* [2]
Total mileage	bn km	*67.7*	*59.5*	*54.9*	*53.7*	*– 20.6*
Total consumption	bn l	*71.9*	*63.2*	*58.3*	*57.1*	*– 20.5*

Resident concept; incl. consumption of bio-fuels.

1 Until 2006 incl. vehicles temporarily taken off the road.
2 Change 2014 on 2005: total of the changes in the subperiods 2005 to 2006 and 2007 to 2014.
Source: German Institute for Economic Research (DIW - Berlin)

Fuel consumption changed similarly to vehicle stocks. While diesel consumption of cars increased by 51.4 %, gasoline consumption decreased by 20.9 %. The steeper decline in gasoline consumption compared to the decrease in vehicle stocks resulted from a decline in annual mileage (– 10.5 %) and the trend from petrol to diesel vehicle use, especially among frequent drivers. Furthermore, the reduced petrol consumption was due to a decline in average fuel consumption (- 6.6 %).

4 Vehicle stock, mileage and fuel consumption of road freight transport

Between 2005 and 2014, the stock of heavy duty vehicles declined slightly by 0.6 % (cf. table 5). Due to changes in the relevant delimitation in 2007, the comparability of vehicle stocks is limited over the whole period. The decline in vehicle stocks was largely attributable to the 2008/2009 economic crisis. In 2009, vehicle stocks were down nearly 9 % compared with 2008. From 2009 onwards, however, numbers increased again (2009 – 2014: + 6.5 %). If we consider heavy duty trucks (net load ›3.5 t) separately from trailer trucks, the number of trailer trucks increased much more considerably (+ 10 %) than that of heavy duty trucks (+ 4.4 %).

Table 5 **Vehicle stock, mileage and fuel consumption of road freight transport**

		2005	2007	2009	2014	2014 on 2005
						%
		Total				
Vehicle stock [1]	1,000	2,555.6	2,356.5	2,394.7	2,737.5	*14.3* [3]
Annual mileage [1]	1,000 veh.-km/yr	27.4	32.0	30.7	29.4	*– 6.7* [3]
Total mileage	bn km	70.1	75.4	73.6	80.6	*15.0*
Specific consumption	l/100 km	25.2	25.3	24.5	21.2	*– 15.8*
Total consumption	bn l	17.6	19.1	18.0	17.1	*– 3.2*
		Heavy duty vehicles [2]				
Vehicle stock [1]	1,000	526.0	484.7	443.1	471.8	*– 0.6* [3]
Annual mileage [1]	1,000 veh.-km/yr	54.9	64.9	65.9	62.7	*– 0.7* [3]
Total mileage	bn km	28.9	31.5	29.2	29.6	*0.5*
Specific consumption	l/100 km	41.9	41.2	40.5	34.1	*– 18.6*
Total consumption	bn l	12.1	13.0	11.8	10.1	*– 16.6*
Annual transport performance	1,000 tkm/yr	588.8	708.3	693.9	656.9	*– 3.0*
Total transport performance	bn tkm	309.7	343.3	307.5	309.9	*0.1*
Specific consumption	l/100 tkm	3.9	3.8	3.8	3.3	*– 16.6*
		LDT [4]				
Vehicle stock [1]	1,000	2,029.6	1,871.9	1,951.6	2,265.7	*22.3* [3]
Annual mileage [1]	1,000 veh.-km/yr	20.3	23.5	22.7	22.5	*– 4.3* [3]
Total mileage	bn km	41.2	44.0	44.4	51.0	*23.7*
Specific consumption	l/100 km	13.5	14.0	14.0	13.7	*1.8*
Total consumption	bn l	5.5	6.2	6.2	7.0	*25.9*

Resident concept; incl. consumption of bio-fuels.
1 Until 2006 incl. vehicles temporarily taken off the road.
2 Heavy duty trucks (net load › 3.5 t) and trailer trucks.
3 Change 2014 on 2005: total of the changes in the subperiods 2005 to 2006 and 2007 to 2014.
4 LDT = light duty trucks (net load ‹ 3.5 t).
Source: German Institute for Economic Research (DIW - Berlin) and Federal Motor Transport Authority, Flensburg

The stock of light duty trucks (LDT) has increased for many years now. Between 2005 and 2014, the number of LDT increased by 22.3 %.

If we look at heavy and light duty transport as a whole, stocks were up 14.3 % despite a slightly decreasing number of heavy duty vehicles.

In the period 2005 to 2014, total mileage in heavy duty transport grew by not more than 0.5 %. The vehicle utilisation rate increased continuously until the crisis year of 2009. Between 2009 and 2014, the annual mileage per vehicle dropped considerably (– 4.8 %). These trends are even more visible in transport performance (tonne-kilometres). In the years before the economic crisis, transport performance increased markedly (2005 – 2009: + 10.0 %). From 2009 onwards, however, the annual transport performance decreased by 9.2 % so that it was only slightly above 2005 levels (2005 – 2014: + 0.1 %).

In heavy duty transport, the specific fuel consumption per 100 vehicle-kilometres declined by 18.6 % between 2005 and 2014. In the same period, the specific consumption per 100 tonne-kilometres dropped by 16.6 %. Reasons for the stronger decline in vehicle kilometre-related consumption were presumably that larger trucks or trailer trucks were increasingly used and the utilisation rate was improved. In line with the increasing transport performance, fuel consumption in heavy duty transport was down 16.6 % over that period.

Table 6 **Transport performance in heavy duty transport – national and domestic concepts**

	2005	2007	2009	2011	2014	2014 on 2005
	mn tkm					%
Residents[1]	310.1	343.4	307.6	323.5	309.9	*– 0.1*
Residents abroad[2]	38.3	43.1	32.0	30.2	24.2	*– 36.8*
Non-residents in the territory[3]	130.9	153.8	140.0	164.0	178.0	*36.0*
Domestic territory	402.7	454.1	415.6	457.3	463.7	*15.2*

1 Source: Federal Motor Transport Authority, Flensburg (KBA).
2 Own calculations.
3 Source: Federal Ministry of Transport: Verkehr in Zahlen 2015/2016.

A comparison of the total transport performance of residents in heavy duty transport with the total performance in the domestic territory reveals the following (cf. table 6): the transport performance of residents remained almost unchanged (– 0.1 %) from 2005 to 2014 although a marked increase was observed until 2007 (2005 – 2007: + 10.7 %). While transport performance increased again after the severe slump during the 2008/2009 economic crisis, it declined heavily after (2011 – 2014: – 4.2 %). Over the whole period under review, however, transport performance on German roads was up 15.2 %. This means that non-residents increased their activities in Germany. Their transport performance was up by not less than 36 %. As a matter of fact, the proportion of foreign transport activities on German roads rose markedly from 32.5 % in 2005 to 38.4 %, while residents' transport performance abroad declined substantially (– 43.9 % from 2007).