

Economy and Use of Environmental Resources

Tables on Environmental-Economic Accounting
Part 3: Air emissions



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 4.14.3 Direct process emissions of particulate matter
 4.14.4 Direct emissions of particulate matter of road transport

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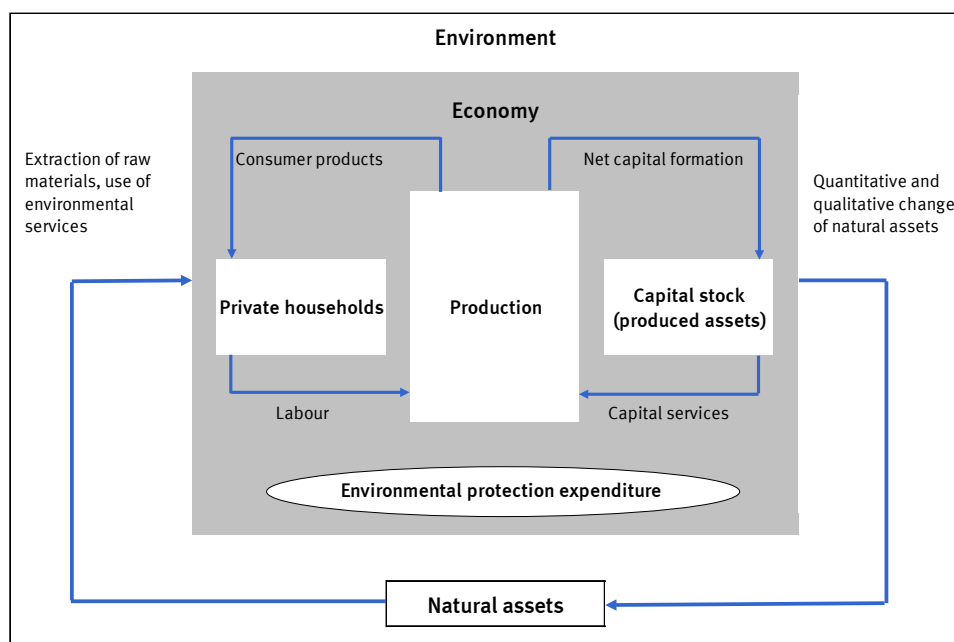
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1 Environmental-Economic Accounting of the Federal Statistical Office

Environmental-Economic Accounting (EEA) describes the **interrelationship between the economy and the environment**. For its economic activities, production and consumption an economy not only uses labour and produced assets but also natural assets. Natural assets include raw materials such as sources of energy, ores, other minerals and water as well as land that serves as a location for production, consumption and various leisure activities. These parts of natural assets are used directly. Other components of natural assets are ecosystems and other natural systems such as the atmosphere. They support economic activities by absorbing and eliminating residues and pollutants arising from production and consumption, such as atmospheric emissions, waste and effluent.

Figure 1 shows the interrelationship between economy¹ and environment. On the one hand natural assets are used as input for the economic process. On the other hand the economy discharges residues and pollutants.

Figure 1: Interrelationship economy environment



The use of natural assets – similar to the produced capital stock – generally involves depletion, which means that the burden or **impact on the environment** causes changes in its state and/or natural assets. On the one hand, these changes are of a quantitative nature (e.g. a decreasing amount of non-renewable raw materials); on the other, they have many qualitative aspects (deteriorating air quality due to emissions of pollutants, diminished biodiversity etc.). Attempts are being made to prevent these negative changes with targeted, appropriate environmental protection measures, such as by avoiding environmental burden (e.g. desulphurising flue gas) or remedying damage that has already been done (e.g. cleaning up polluted sites). The interdependencies between the economy and the environment therefore are not restricted to showing the burdens on the environment; in fact the pattern also includes changes to the state of

¹ Both are shown in the simplified form in the diagram.

1 Environmental-Economic Accounting of the Federal Statistical Office

the environment brought about by pollution and the steps taken to avoid it or repair the damage.

The EEA aims to describe all three forms of interdependence between economy and environment – environmental burden, the environmental state and environmental measures. The description of these interdependencies takes as its starting point the fact, mentioned above, that a national economy not only uses labour and capital but also nature. Therefore, the basic idea is to take the commonly accepted definition of a national economy and expand it by a "factor nature". The System of National Accounts (SNA) provides a comprehensive and systematic definition of economic activity. Principally, they show monetary transactions (flows) and assets using standardised classifications. EEA were conceived as a satellite system for the national accounts, the objective of which is to extend the presentation of the economic process by a depiction of the interrelationship between the economic system and the environment. The environmental flows and inventories are almost always presented in physical units. For example, air emissions are expressed in tonnes, energy consumption in Terajoules, area used for transport and settlement purposes (land use) in square metres.

An important feature is the full compatibility of both systems – the national accounts and the EEA. The underlying concepts, definitions, distinctions, and classifications in both systems match as far as this is logically sensible and possible. This also applies and particularly so for the economic classifications used in the EEA and the SNA. Because of these common concepts, definitions, distinctions and classifications the results of the EEA can be linked internally and to the identically categorised SNA data and they can be analysed jointly. Compatibility with the national accounts permits for example to relate the environmental parameters, which are mostly shown in physical units (such as in tonnes), to the economic indices (in euros). Of particular importance here are the data on the efficiency of environmental use, expressed as an arithmetical ratio of the figure of interest (such as raw materials consumption) to the gross value added (GVA) or to the gross domestic product (GDP). With regard to the details of calculating productivities and intensities see the notes on the tables in Part 1.

The concept underlying the EEA is to express the status quo and the change in natural assets in units of money, so as to be able to determine what is known as corrected macro-economic aggregates, such as the ecological domestic product. Particularly insofar as such evaluations do not assess the quantitative decrease of resources, but refer to qualitative changes of other components, they are problematic in many respects with regard to the methods used (valuation/aggregation problems, restricted knowledge about correlation between cause and effect and considerable regional differences). That is why such calculations tend not to be carried out by the Federal Statistical Office but by scientific research institutes. Consequently, when presenting environmental pollution and the state of the environment EEA of the Federal Statistical Office is restricted to physical data.

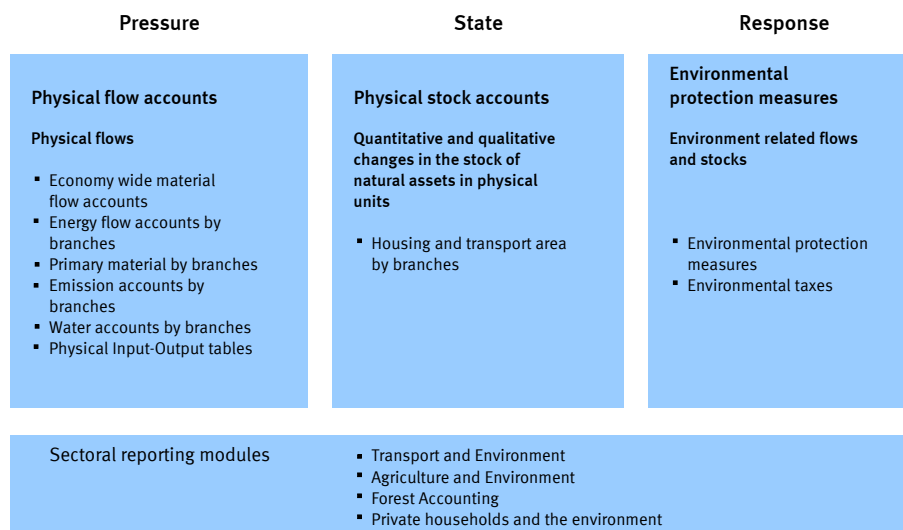
Environmental economic accounts and national accounts describe two dimensions of sustainable development– economy and environment – and their interrelationship. Therefore they provide an important and useful data base for political discussions concerning sustainability.

Figure 2 shows the different reporting **modules of the EEA** of the Federal Statistical Office. They reflect the internationally recognized pressure-state-response model, used to statistically show correlations between the environment and the economy. The **environmental pressures** reporting module shows the material flows listed behind it: the amount of raw materials extracted per year, the amount of pollutants emitted per year etc. This reporting module does not include produced goods or services, but raw materials extracted from nature and residual materials and hazardous substances emitted back into nature. The respective flows for each type of material are booked as

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consolidated quantities, in what is known as the material account, which charts the flows of material between a national economy and both the natural environment and the world's other national economies.

Figure 2: Modules of German Environmental-Economic Accounting



At present, the **state of the environment** reporting module of the German EEA only expresses the component of the natural capital presented by land area. Especially land use by housing and transport are in the focus of this reporting module. Looking at how much land area is used by which economic stakeholder, however, can not be realised for the time being. Landscapes and ecosystems form yet another essential component of the natural capital, which should principally be included by accounting. In Germany these aspect are dealt with by Agency for Nature Protection, not by environmental economic accounts. Displaying the stocks of mineral resources – a third aspect of the natural assets, which may be of great importance for countries rich in raw materials – has a fairly low priority as far as German EEA is concerned and has so far not been considered. A reporting module has so far only been developed for forest.

In the module **environmental protective measures**, components already included in the monetary transactions of the national accounts are shown separately and, as a rule, broken down further. Here, for example, environmentally relevant taxes, such as vehicle tax or fuel tax, are shown. Another important part of environmental protective measures consist of investment and ongoing expenditure for environmental protection in the government and manufacturing industry sectors, as well as privatised public enterprises. Contrary to the physical electric power accounts of the material and energy flow accounts and the physical asset accounts describing the state of the environment, the EEA shows the environmental protective measures in the form of monetary accounts.

The **sectoral reporting modules**, presently used for the transport, agriculture, forestry, and private households sectors, enable extending the EEA standard programme by single items for politically significant topics. For such sectors, these reporting modules provide a much more detailed picture of the complete range of interdependencies between the environment and the economy, across the EEA components mentioned above.

1 Environmental-Economic Accounting of the Federal Statistical Office

Typical of EEA is considering the environmental impact (removing raw materials, land use, services of the environment) of economic activities from two angles: the first question is to what extent an environmental factor enters the economic cycle or is adversely affected in production or consumption of private households. Apart from this it is however also important to know what quantities of environmental factors are being employed and for what final purpose. This second assessment not only assigns directly consumed factor components to a specific category of use (such as the consumption activities of private households), but also those quantities needed to manufacture all the goods consumed by the households (at all stages of the production process) and therefore consumed, as it were, "indirectly" by the households. This contrasting of **direct and indirect parameters** is comparable with the presentation of origin and use in the national accounts, and applies to numerous subjects of EEA.

"Upstream" indirect consumption cannot be derived from the accounting system directly. Allocation takes place through a model approach based on input-output tables (IOT). IOTs are central elements of the national accounts; they include details of the upstream interdependencies between the individual production sectors, to name just one example.

The concept of Environmental Economic Accounts was established and further developed at **international level** by the United Nations, in particular, and adopted in February 2012 as an international statistical standard "System of Integrated Environmental and Economic Accounting (SEEA Central Framework 2012)"². In Germany substantial sections of the environmental economic accounts are drawn up based on these conceptual proposals in the SEEA.

² European Commission/Food and Agriculture Organisation/International Monetary Fund/Organisation for Economic Co-Operation and Development/ United Nations/World Bank (2012): System of Environmental-Economic Accounting – Central Framework, White cover publication, pre-edited text subject to official editing.

2 Overview on classification

2.1 Classification of homogeneous branches

No.	Branches	Classification of products by activity (CPA) in the European Community	
		Designation	No.
1	Products of agriculture, forestry and fishing	Products of agriculture, forestry and fishing	A
2	Products of agriculture, hunting and related services	Products of agriculture, hunting and related services	01
3	Products of forestry, logging and related services	Products of forestry, logging and related services	02
4	Fish and other fishing products; aquaculture products	Fish and other fishing products; aquaculture products; support services to fishing	03
5	Mining and quarrying	Mining and quarrying	B
6	Coal and lignite	Coal and lignite	05
7	Crude petroleum and natural gas	Crude petroleum and natural gas	06
8	Metal ores, other mining and quarrying products	Metal ores, other mining and quarrying products; mining support services	07 – 09
9	Manufactured products	Manufactured products	C
10	Food products; beverages; tobacco products	Food products; beverages; tobacco products	10 – 12
11	Textiles; wearing apparel; leather and related products	Textiles; wearing apparel; leather and related products	13 – 15
12	Wood and products of wood and cork, except furniture	Wood and products of wood and cork, except furniture; articles of straw and plaiting materials	16
13	Paper and paper products	Paper and paper products	17
14	Printing and recording services	Printing and recording services	18
15	Coke and refined petroleum products	Coke and refined petroleum products	19
16	Coke oven products	Coke oven products	19.1
17	Refined petroleum products	Refined petroleum products	19.2
18	Chemicals and chemical products	Chemicals and chemical products	20
19	Basic pharmaceutical products and pharmaceutical preparations	Basic pharmaceutical products and pharmaceutical preparations	21

2 Overview on classification

No.	Branches	Classification of products by activity (CPA) in the European Community	
		Designation	No.
20	Rubber and plastic products	Rubber and plastic products	22
21	Other non-metallic mineral products	Other non-metallic mineral products	23
22	Glass and glass products	Glass and glass products	23.1
23	Refractory products, cut, shaped and finished stone	Refractory products; clay building materials; other porcelain and ceramic products; cement, lime and plaster; articles of concrete, cement and plaster; cut, shaped and finished stone; other non-metallic mineral products	23.2 – 23.9
24	Basic metals	Basic metals	24
25	Basic iron and steel and ferro-alloys, other products of steel	Basic iron and steel and ferro-alloys; tubes, pipes, hollow profiles and related fittings of steel; other products of the first processing of steel	24.1 – 24.3
26	Basic precious and other non-ferrous metals	Basic precious and other non-ferrous metals	24.4
27	Casting services of metal	Casting services of metal	24.5
28	Fabricated metal products, except machinery and equipment	Fabricated metal products, except machinery and equipment	25
29	Computer, electronic and optical products	Computer, electronic and optical products	26
30	Electrical equipment	Electrical equipment	27
31	Machinery and equipment n. e. c.	Machinery and equipment n. e. c.	28
32	Motor vehicles, trailers and semi-trailers	Motor vehicles, trailers and semi-trailers	29
33	Other transport equipment	Other transport equipment	30
34	Furniture, other manufacture goods	Furniture, other manufacture goods	31 – 32
35	Repair and installation services of machinery and equipment	Repair and installation services of machinery and equipment	33
36	Electricity, gas, steam and air conditioning	Electricity, gas, steam and air conditioning	D
37	Electricity, transmission and distribution services, steam	Electricity, transmission and distribution services; steam and air conditioning supply services	35.1, 35.3

2 Overview on classification

No.	Branches	Classification of products by activity (CPA) in the European Community	
		Designation	No.
38	Manufactured gas	Manufacture gas; distribution services of gaseous fuels through mains	35.2
39	Water supply; sewerage, waste management and remediation services	Water supply; sewerage, waste management and remediation services	E
40	Natural water; water treatment and supply services	Natural water; water treatment and supply services	36
41	Sewerage services; waste collection and material recovery services	Sewerage services; waste collection and material recovery services	37 – 39
42	Sewerage services, sewerage sludge	Sewerage services, sewerage sludge	37
43	Waste collection, treatment and disposal services	Waste collection, treatment and disposal services; materials recovery services; remediation services and other waste management services	38 – 39
44	Constructions and construction works	Constructions and construction works	F
45	Building and building construction works	Building and building construction works	41 – 42
46	Specialised construction works	Specialised construction works	43
47	Wholesale and retail trade services; repair services of motor vehicles	Wholesale and retail trade services; repair services of motor vehicles and motorcycles	G
48	Wholesale and retail trade and repair services of motor vehicles	Wholesale and retail trade and repair services of motor vehicles and motorcycles	45
49	Wholesale trade services, except of motor vehicles and motorcycles	Wholesale trade services, except of motor vehicles and motorcycles	46
50	Retail trade services, except of motor vehicles and motorcycles	Retail trade services, except of motor vehicles and motorcycles	47
51	Transportation and storage services	Transportation and storage services	H
52	Passenger rail transport services, freight rail transport services	Passenger rail transport services, interurban; freight rail transport services	49.1 – 49.2
53	Other passenger land transport services, transport services via pipeline	Other passenger land transport services; freight transport services by road and removal services; transport services via pipeline	49.3 – 49.5

2 Overview on classification

No.	Branches	Classification of products by activity (CPA) in the European Community	
		Designation	No.
54	Water transport services	Water transport services	50
55	Air transport services	Air transport services	51
56	Warehousing and support services for transportation	Warehousing and support services for transportation	52
57	Postal and courier services	Postal and courier services	53
58	Accommodation and food services	Accommodation and food services	I
59	Information and communication services	Information and communication services	J
60	Financial and insurance services	Financial and insurance services	K
61	Real estate services	Real estate services	L
62	Professional, scientific and technical services	Professional, scientific and technical services	M
63	Administrative and support services	Administrative and support services	N
64	Public administration and defence services	Public administration and defence services	O
65	Education services	Education services	P
66	Human health and social work services	Human health and social work services	Q
67	Other services	Arts, entertainment and recreation services; other services; services of households as employers; undifferentiated goods and services produced by households for own use	R – T
68	All homogeneous branches	All homogeneous branches	

2 Overview on classification

2.2 Classification of industries

No.	Industries	Classification of economic activities, 2008 edition	
		Designation	No.
1	Agriculture, forestry and fishing	Agriculture, forestry and fishing	A
2	Crop and animal production, hunting and related services	Crop and animal production, hunting and related services	01
3	Forestry and logging	Forestry and logging	02
4	Fishing and aquaculture	Fishing and aquaculture	03
5	Mining and quarrying	Mining and quarrying	B
6	Mining of coal and lignite	Mining of coal and lignite	05
7	Extraction of crude petroleum and natural gas	Extraction of crude petroleum and natural gas	06
8	Mining of metal ores, other mining and quarrying	Mining of metal ores; other mining and quarrying; mining support service activities	07 – 09
9	Manufacturing	Manufacturing	C
10	Manufacture of food products, beverages and tobacco products	Manufacture of food products; manufacture of beverages and manufacture tobacco products	10 – 12
11	Manufacture of textiles, wearing apparel, leather	Manufacture of textiles; manufacture of wearing apparel; manufacture of leather and related products	13 – 15
12	Manufacture of wood and products of wood and cork, except furniture	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	16
13	Manufacture of paper and paper products	Manufacture of paper and paper products	17
14	Printing and reproduction of recorded media	Printing and reproduction of recorded media	18
15	Manufacture of coke and refined petroleum products	Manufacture of coke and refined petroleum products	19
16	Manufacture of coke oven products	Manufacture of coke oven products	19.1
17	Manufacture of refined petroleum products	Manufacture of refined petroleum products	19.2
18	Manufacture of chemicals and chemical products	Manufacture of chemicals and chemical products	20

2 Overview on classification

No.	Industries	Classification of economic activities, 2008 edition	
		Designation	No.
19	Manufacture of basic pharmaceutical products	Manufacture of basic pharmaceutical products and pharmaceutical preparations	21
20	Manufacture of rubber and plastic products	Manufacture of rubber and plastic products	22
21	Manufacture of other non-mineral products	Manufacture of other non-mineral products	23
22	Manufacture of glass and glass products	Manufacture of glass and glass products	23.1
23	Manufacture of refractory products, cutting, finishing of stone	Manufacture of refractory products; manufacture of clay building materials; manufacture of other porcelain and ceramic products; manufacture of cement, lime and plaster; manufacture of articles of concrete, cement and plaster; cutting, shaping and finishing of stone; manufacture of abrasive products and non-metallic mineral products n. e. c.	23.2 – 23.9
24	Manufacture of basic metals	Manufacture of basic metals	24
25	Iron and steel	Manufacture of basic iron and steel and ferro-alloys; manufacture of tubes, pipes, hollow profiles and related fittings of steel; manufacture of other products of first processing of steel	24.1 – 24.3
26	Manufacture of basic precious and non-ferrous metals	Manufacture of basic precious and other non-ferrous metals	24.4
27	Casting of metals	Casting of metals	24.5
28	Manufacture of fabricated metal products, except machinery	Manufacture of fabricated metal products, except machinery and equipment	25
29	Manufacture of computer, electronic and optical products	Manufacture of computer, electronic and optical products	26
30	Manufacture of electrical equipment	Manufacture of electrical equipment	27
31	Manufacture of machinery and equipment n. e. c.	Manufacture of machinery and equipment n. e. c.	28
32	Manufacture of motor vehicles, trailers and semi-trailers	Manufacture of motor vehicles, trailers and semi-trailers	29

2 Overview on classification

No.	Industries	Classification of economic activities, 2008 edition	
		Designation	No.
33	Manufacture of other transport equipment	Manufacture of other transport equipment	30
34	Manufacture of furniture; other manufacturing	Manufacture of furniture; other manufacturing	31 – 32
35	Repair and installation of machinery and equipment	Repair and installation of machinery and equipment	33
36	Electricity, gas, steam and air conditioning supply	Electricity, gas, steam and air conditioning	D
37	Electric power generation, transmission and distribution, steam	Electric power generation, transmission and distribution; steam and air conditioning supply	35.1/ 35.3
38	Manufacture of gas; distribution of gaseous fuels through mains	Manufacture of gas; distribution of gaseous fuels through mains	35.2
39	Water supply, sewerage, waste management and remediation activities	Water supply, sewerage, waste management and remediation activities	E
40	Water collection, treatment and supply	Water collection, treatment and supply	36
41	Sewerage, waste collection, treatment and disposal activities	Sewerage, waste collection, treatment and disposal activities; material recovery; remediation activities and other waste management services	37 – 39
42	Sewerage	Sewerage	37
43	Waste collection, treatment and disposal activities	Waste collection, treatment and disposal activities; material recovery; remediation activities and other waste management services	38 – 39
44	Construction	Construction	F
45	Construction of buildings, civil engineering	Construction of buildings, civil engineering	41 – 42
46	Specialised construction activities	Specialised construction activities	43
47	Wholesale and retail trade; repair of motor vehicles and motorcycles	Wholesale and retail trade; repair of motor vehicles and motorcycles	G
48	Wholesale and retail trade and repair of motor vehicles	Wholesale and retail trade and repair of motor vehicles and motorcycles	45
49	Wholesale trade, except of motor vehicles and motorcycles	Wholesale trade, except of motor vehicles and motorcycles	46

2 Overview on classification

No.	Industries	Classification of economic activities, 2008 edition	
		Designation	No.
50	Retail trade, except of motor vehicles and motorcycles	Retail trade, except of motor vehicles and motorcycles	47
51	Transportation and storage	Transportation and storage	H
52	Passenger rail transport, interurban; freight rail transport	Passenger rail transport, interurban; freight rail transport	49.1 – 49.2
53	Other passenger land transport; transport via pipeline	Other passenger land transport; freight transport by road and removal services; transport via pipeline	49.3 – 49.5
54	Water transport	Water transport	50
55	Air transport	Air transport	51
56	Warehousing and support activities for transportation	Warehousing and support activities for transportation	52
57	Postal and courier activities	Postal and courier activities	53
58	Accommodation and food service activities	Accommodation and food service activities	I
59	Information and communication	Information and communication	J
60	Financial and insurance activities	Financial and insurance activities	K
61	Real estate activities	Real estate activities	L
62	Professional, scientific and technical activities	Professional, scientific and technical activities	M
63	Administration and support service activities	Administration and support service activities	N
64	Public administration and defence; compulsory social security	Public administration and defence; compulsory social security	O
65	Education	Education	P
66	Human health and social work activities	Human health and social work activities	Q
67	Other service activities	Arts, entertainment and recreation; other service activities; activities of households and employers; undifferentiated goods and service producing activities of households for own use	R – T
68	All industries	All industries	

3 Abbreviations and symbols

Abbreviations – general

NH ₃	=	ammonia
CH ₄	=	methane
CO ₂	=	carbon dioxide
NO ₂	=	nitrogen dioxide
NO _x	=	nitric oxides (= nitrogen dioxide + nitrogen monoxide)
N ₂ O	=	nitrous oxide (= laughing gas)
NMVOG	=	volatile organic compounds (not including methane)
SO ₂	=	sulphur dioxide
SF ₆	=	sulphur hexafluoride
PFCs	=	perfluorocarbons
HFCs	=	hydrofluorocarbons
H ₂ O	=	water
NE	=	Non-ferrous metals
No.	=	number
Incl.	=	including
EB	=	Energy balance
EEA	=	Environmental-Economic Accounting
SNA	=	System of National Accounts

Abbreviations – units of measure

Equ.	=	equivalent		
EUR	=	Euro		
J	=	Joule	1 J	= 1 watt seconds (Ws)
kJ	=	kilojoules	1 kJ	= 10 ³ J
MJ	=	megajoules	1 MJ	= 10 ⁶ J
GJ	=	gigajoules	1 GJ	= 10 ⁹ J
TJ	=	terajoules	1 TJ	= 10 ¹² J

3 Abbreviations and symbols

PJ	=	petajoule	1 PJ	=	10 ¹⁵ J
Kg	=	kilogram			
t	=	tonnes			
mn	=	million			
bn	=	billion			
MWh	=	megawatt hour			
h	=	hour			
m ³	=	cubic metre			
%	=	per cent			
m ²	=	square metre			
km ²	=	square kilometre			
ha	=	hectare	1 ha	=	10 000 m ²
t-km	=	ton-kilometre			
p-km	=	passenger-kilometre			
o. b.	=	without bark			

Explanation of symbols

0	=	less than half of 1 in the last digit occupied, but more than zero
...	=	data will be available later
X	=	cell blocked for logical reasons
.	=	numerical value unknown or not to be disclosed
-	=	no figures or magnitude zero

Deviations in the totals may occur because of rounding off.

Note

Since the release of the tables in 2011 homogeneous branches (WZ 2008) are presented in a break down comparable to the statistical classification of economic activities of the European Community. Until 2010, the tables were calculated according the WZ 1993 respectively on the basis of the WZ 2003.

The intensities are shown in the tables 2011 only for the years from 2000 onwards, as data on gross value added by homogeneous branches after the revision of the national accounts are available only as from the reference year 2000.

4 General notes

Greenhouse gases

According to the Kyoto Protocol¹, greenhouse gases held responsible for climate change include carbon dioxide (CO₂), nitrous monoxide (previously: nitrous oxide) = laughing gas (N₂O), methane (CH₄), fluorocarbons (FC)², sulphur hexafluoride (SF₆) as well as nitrogen trifluoride (NF₃). These gases are mainly emitted during the combustion of fossil fuels, such as coal, crude oil and natural gas. Other important sources are specific industrial processes, agricultural activities, waste treatment and the use of solvents. The almost unanimous position held by scientific community³ is that greenhouse gases contribute significantly to global warming.

The total greenhouse gas emissions are measured in so-called CO₂ equivalents. The basis for the calculation of total greenhouse gas emissions is formed by the information for the individual pollutants, measures in tonnes, which are converted to the unit of carbon dioxide using generally-accepted equivalence benchmarks in line with their potential to affect the climate system.

The calculation for carbon dioxide and other greenhouse gases by homogeneous branches and private households, measured in 1,000 tonnes, are initially based in Environmental-Economic Accounting on the data of the Federal Environmental Agency on emissions, use of energy and emission factors derived from so-called structural elements. Furthermore, the data on energy consumption and emission-relevant energy by homogeneous branches are used to break down emissions. These data are essentially based on the energy balances of the Working Group on Energy Balances (Arbeitsgemeinschaft Energiebilanzen – AGEb) and on the input-output-tables (Federal Statistical Office). The figures of Environmental-Economic Accounting on CO₂ as well as on other greenhouse gases, are fully compatible by groups of emitters with the corresponding information published by the Federal Environmental Agency, and can be transferred from one to the other taking account of the quantifiable differences in concept.

The cumulated CO₂ emissions are calculated under utilization of so-called hybrid input-output-tables. For the imports of emission-intensive branches to Germany, the production structures in the producing countries are considered. Also national CO₂ coefficients are taken for imported products.

Other air pollutants

Other air pollutants under observation due to the occurrence of harmful concentrations of emissions are, in particular, sulphur dioxide, nitrogen dioxide and nitrogen oxide, particles (PM₁₀ and PM_{2.5}), lead, benzene and carbon monoxide. Added to these, there are the low level ozone-forming precursor chemicals. These are mainly volatile organic compounds (VOC), excluding methane, as well as nitrogen oxide, which have already been mentioned for their various negative effects on, for example, biodiversity and groundwater.

¹ National Inventory Report 2012 (Federal Environment Agency): the Kyoto Protocol entered into force February 2005. Since the date, the international community of states is obliged to develop binding action plans and tools for the implementation of global climate protection. Within the framework of this obligation, the European Community (at that time made up of 15 Member States) undertook to reduce its greenhouse gas emissions by 8 % in the period 2008 – 2012 compared to the base year (1990 or 1995). This obligation was split within a burden-sharing framework between the EU Member States involved. Accordingly, Germany took on a considerable share of the EU obligation by committing to reducing emissions by 21 % compared to the base year.

² Fluorocarbons are subdivided into hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs).

³ Cf., in particular, statements by the “Intergovernmental Panel on Climate Change“ at: www.ipcc.ch.

4 General notes

The Federal Government's Sustainability Strategy deals with the subject of air pollutants in the four emission types of sulphur dioxide (SO₂), nitrogen oxide (NO_x), ammonia (NH₃) and non-methane volatile organic compounds (NMVOC). These substances are emitted during, among other things, the combustion of fossil fuels, such as coal, crude oil and natural gas. Other important sources are agricultural activities. In calculation for the air pollutant index – in accordance with the Sustainability Strategy – the unweighted average is taken from individual measurements (relating to the year 2005). Individual air pollutants can also be presented in tonnes.

Glossary

Air pollutants	Air pollutants (other than greenhouse gases, namely: SO ₂ , NO _x , NH ₃ and NMVOC) are atmospheric substances which could harm human beings, animals, the vegetation and other precious substances. The above mentioned air pollutants are seen as responsible for overfertilisation of land, acidification of ecosystems and for the Ozone depletion in the higher atmosphere.
CH₄	Methane (CH ₄) is a non-poisonous, colourless and odourless gas, generated by anaerobic decomposition of organic compounds. Methane is the second most important greenhouse gas after carbon dioxide. Its equivalent factor (Global Warming Potential Value) is 25times higher than those of carbon dioxide. The most important emission source for methane in Germany is the agriculture sector (animal breeding) with more than 60% in 2012.
CO₂	Carbon dioxide (CO ₂) is a non-poisonous, colourless and odourless gas which belongs in very small portions of about 280 ppm to the atmosphere by nature. The anthropogenic CO ₂ results before all from combustion of carbon and is considered as the most important greenhouse gas (> 85% in Germany).
CO₂ emissions	The anthropogenic emission of carbon dioxide (CO ₂) is seen as dominant reason for climate change. It results before all from the combustion of fossil fuels.
Direct emissions	Direct emissions of air pollutants are emissions resulting directly from specific activities like combustion and other manufacturing processes. They are usually calculated via extent of activity times specific emission coefficient.
Emissions	Emissions are air pollutants. In general, only those air pollutants (gaseous and solid air pollutants, sound, radiation etc.) are seen as emissions, which are capable to have harmful effects on nature and men's health.
Greenhouse gases	According to Kyoto Protocol the following elements are esteemed as Greenhouse gases: carbon dioxide (CO ₂), Nitrous oxide (N ₂ O), methane (CH ₄), semi-halogenated Fluoro-carbons (H-FKW/HFC), perfluorinated hydrocarbons (FKW/PFC) and sulphur hexafluoride (SF ₆). These substances result before all from combustion of fossil fuels. Other important sources are "industrial processes", "agricultural activities", "waste management" and the "handling of solvents". The Greenhouse gases are seen as responsible for Climate Change (global warming).
Indirect emissions	Indirect emissions can be added (besides direct emissions) additionally to products via integration of emissions of intermediate products. Indirect emissions are those which are the consequence of production and transport of intermediate products necessary for the product production.
Kyoto Protocol	The Kyoto Protocol was adopted in Kyoto, Japan, on 11 December 1997 and entered into force on 16 February 2005. The detailed rules for the implementation of the protocol were adopted at COP 7 in Marrakesh, Morocco, in 2001, and are referred to as the "Marrakesh Accords". Its first commitment period started in 2008 and ended in 2012. In Doha, Qatar, on 8 December 2012, the "Doha Amendment to the Kyoto Protocol" was adopted. The amendment includes before all new commitments for Annex I Parties to the Kyoto Protocol who agreed to take on commitments in a second commitment period from 1 January 2013 to 31 December 2020.
N₂O	Nitrous oxide (N ₂ O) is a relatively inert oxide of nitrogen produced as a result of microbial action in the soil, use of fertilizers containing nitrogen, burning of timber, and so forth. This nitrogen compound may contribute to greenhouse and ozone-depleting effects. The Global Warming Potential (GWP) of N ₂ O is factor 298 compared to CO ₂ .

Table 4.1.1: Direct emissions of greenhouse gases - all gases
CO₂ equivalent (1,000 tonnes (Gg))

No.	CPA ¹	Homogeneous branches	2000							
			Total	of which						
				CO ₂ ²	CH ₄	N ₂ O	HFC	PFC	SF ₆	NF ₃
1	A	Products of agriculture, forestry and fishing.....	79,498	14,609	34,346	30,544	-	-	-	-
2	01	Products of agriculture, hunting and related services.....	78,889	14,033	34,315	30,541	-	-	-	-
3	02	Products of forestry, logging and related services.....	556	523	31	3	-	-	-	-
4	03	Fish and other fishing products; aquaculture products.....	53	53	0	1	-	-	-	-
5	B	Mining and quarrying.....	22,427	5,163	16,756	508	-	-	-	-
6	05	Coal and lignite.....	17,610	1,035	16,574	1	-	-	-	-
7	06	Crude petroleum and natural gas.....	3,212	3,026	181	4	-	-	-	-
8	07-09	Metal ores, other mining and quarrying products, mining support services.....	1,605	1,102	1	502	-	-	-	-
9	C	Manufactured products.....	204,154	192,230	1,097	6,216	1,542	844	2,216	9
10	10-12	Food products, beverages, tobacco products.....	10,650	10,575	19	56	-	-	-	-
11	13-15	Textiles, wearing apparel, leather and related products.....	1,785	1,772	3	9	-	-	-	-
12	16	Wood and products of wood and cork, except furniture.....	1,838	1,782	49	7	-	-	-	-
13	17	Paper and paper products.....	9,026	8,950	21	54	-	-	-	-
14	18	Printing and recording services.....	813	808	2	3	-	-	-	-
15	19	Coke and refined petroleum products.....	25,582	25,180	304	98	-	-	-	-
16	19.1	Coke oven products.....	5,973	5,945	8	20	-	-	-	-
17	19.2	Refined petroleum products.....	19,609	19,235	296	79	-	-	-	-
18	20	Chemicals and chemical products.....	33,263	25,669	562	5,306	1,521	-	205	-
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	2,665	2,648	3	14	-	-	0	-
20	22	Rubber and plastic products.....	2,148	2,135	4	9	-	-	0	-
21	23	Other non-metallic mineral products.....	44,386	43,533	22	179	-	-	652	-
22	23.1	Glass and glass products.....	6,313	5,629	6	27	-	-	652	-
23	23.2-9	Refractory products, cut, shaped and finished stone.....	38,072	37,904	15	153	-	-	-	-
24	24	Basic metals.....	55,996	55,018	83	167	-	413	315	-
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	49,068	48,855	78	135	-	0	0	-
26	24.4	Basic precious and other non-ferrous metals.....	4,919	4,173	2	16	-	413	315	-
27	24.5	Casting services of metal.....	2,009	1,990	3	16	-	-	-	-
28	25	Fabricated metal products, except machinery and equipment.....	3,620	3,599	6	14	-	-	-	-
29	26	Computer, electronic and optical products.....	1,730	961	2	252	21	431	54	9
30	27	Electrical equipment.....	1,807	812	1	4	-	-	990	-
31	28	Machinery and equipment n.e.c.....	3,126	3,106	5	15	-	-	-	-
32	29	Motor vehicles, trailers and semi-trailers.....	3,849	3,827	4	17	-	-	-	-
33	30	Other transport equipment.....	651	646	1	4	-	-	-	-
34	31-32	Furniture, other manufacture goods.....	1,048	1,038	7	4	-	-	-	-
35	33	Repair and installation services of machinery and equipment.....	173	171	0	1	-	-	-	-
36	D (35)	Electricity, gas, steam and air conditioning.....	371,124	365,597	3,066	2,460	-	-	-	-
37	35.1./3	Electricity, transmission and distribution services, steam.....	368,437	365,563	415	2,459	-	-	-	-
38	35.2	Manufactured gas; distribution services of gaseous fuels through mains.....	2,686	35	2,651	1	-	-	-	-
39	E	Water supply; sewerage, waste management and remediation services.....	45,034	8,188	27,922	814	6,265	114	1,732	-
40	36	Natural water; water treatment and supply services.....	37	36	0	1	-	-	-	-
41	37-39	Sewerage services; waste collection and materials recovery services.....	44,998	8,152	27,922	813	6,265	114	1,732	-
42	37	Sewerage services, sewerage sludge.....	681	676	0	5	-	-	-	-
43	38-39	Waste collection, treatment and disposal services.....	44,317	7,477	27,921	808	6,265	114	1,732	-
44	F	Constructions and construction works.....	10,899	10,789	19	92	-	-	-	-
45	41-42	Building and building construction works.....	5,376	5,328	9	38	-	-	-	-
46	43	Specialised construction works.....	5,524	5,460	10	54	-	-	-	-
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	22,823	22,637	84	102	-	-	-	-
48	45	Wholesale and retail trade and repair services of motor vehicles.....	2,903	2,878	11	14	-	-	-	-
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	7,996	7,926	23	47	-	-	-	-
50	47	Retail trade services, except of motor vehicles and motorcycles.....	11,924	11,833	50	40	-	-	-	-
51	H	Transportation and storage services.....	57,879	54,991	2,489	398	-	-	-	-
52	49.1-2	Passenger rail transport services, freight rail transport services.....	2,310	2,300	5	5	-	-	-	-
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	12,723	10,185	2,472	66	-	-	-	-
54	50	Water transport services.....	5,868	5,805	2	62	-	-	-	-
55	51	Air transport services.....	23,867	23,646	3	219	-	-	-	-
56	52	Warehousing and support services for transportation.....	9,627	9,588	6	33	-	-	-	-
57	53	Postal and courier services.....	3,484	3,468	2	14	-	-	-	-
58	I	Accommodation and food services.....	4,524	4,485	25	13	-	-	-	-
59	J	Information and communication services.....	4,642	4,614	8	20	-	-	-	-
60	K	Financial and insurance services.....	2,121	2,106	10	5	-	-	-	-
61	L	Real estate services.....	899	889	2	7	-	-	-	-
62	M	Professional, scientific and technical services.....	8,366	8,165	15	62	-	-	125	-
63	N	Administrative and support services.....	1,027	1,018	4	5	-	-	-	-
64	O	Public administration and defence services; compulsory social security services.....	8,511	8,429	39	43	-	-	-	-
65	P	Education services.....	4,816	4,769	35	11	-	-	-	-
66	Q	Human health and social work services.....	6,423	6,105	51	267	-	-	-	-
67	R-T	Other services.....	9,974	9,904	26	43	-	-	-	-
68		All homogeneous branches.....	865,140	724,689	85,994	41,610	7,806	959	4,072	9
69		Private households.....	236,057	232,559	1,760	1,738	-	-	-	-
70		All homogeneous branches and private households 3.....	1,101,196	957,248	87,754	43,348	7,806	959	4,072	9
71		Transitional balance 4.....	-17,585	-17,385	-16	-184	-	-	-	-
72		Total emissions (gross domestic emissions).....	1,083,612	939,863	87,738	43,164	7,806	959	4,072	9
73		Emissions/Absorptions from LULUCF 5.....	-37,960	-39,633	871	801	-	-	-	-
74		Total emissions (net domestic emissions).....	1,045,651	900,230	88,610	43,965	7,806	959	4,072	9

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Including emissions from biomass.

3 Residents concept, gross emissions.

4 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

5 Absorptions/emissions from land use, land use changes and forestry.

Table 4.1.1: Direct emissions of greenhouse gases - all gases
CO₂ equivalent (1,000 tonnes (Gg))

No.	CPA ¹	Homogeneous branches	2015							
			Total	of which						
				CO ₂ ²	CH ₄	N ₂ O	HFC	PFC	SF ₆	NF ₃
1	A	Products of agriculture, forestry and fishing.....	81,864	17,697	32,474	31,692	-	-	-	-
2	01	Products of agriculture, hunting and related services.....	81,400	17,240	32,472	31,689	-	-	-	-
3	02	Products of forestry, logging and related services.....	415	409	2	3	-	-	-	-
4	03	Fish and other fishing products; aquaculture products.....	49	48	0	1	-	-	-	-
5	B	Mining and quarrying.....	6,249	3,000	3,085	165	-	-	-	-
6	05	Coal and lignite.....	3,840	791	3,048	1	-	-	-	-
7	06	Crude petroleum and natural gas.....	1,551	1,514	35	2	-	-	-	-
8	07-09	Metal ores, other mining and quarrying products, mining support services.....	858	695	1	162	-	-	-	-
9	C	Manufactured products.....	175,345	171,503	990	1,576	121	246	898	12
10	10-12	Food products, beverages, tobacco products.....	8,901	8,835	19	47	-	-	-	-
11	13-15	Textiles, wearing apparel, leather and related products.....	781	776	2	4	-	-	-	-
12	16	Wood and products of wood and cork, except furniture.....	6,100	5,986	68	47	-	-	-	-
13	17	Paper and paper products.....	10,055	9,987	22	46	-	-	-	-
14	18	Printing and recording services.....	798	794	2	3	-	-	-	-
15	19	Coke and refined petroleum products.....	22,618	22,315	225	78	-	-	-	-
16	19.1	Coke oven products.....	5,017	5,010	0	7	-	-	-	-
17	19.2	Refined petroleum products.....	17,601	17,305	225	71	-	-	-	-
18	20	Chemicals and chemical products.....	26,459	24,925	517	862	58	0	97	-
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	880	873	2	5	-	-	-	-
20	22	Rubber and plastic products.....	2,061	2,045	5	11	-	-	-	-
21	23	Other non-metallic mineral products.....	39,296	39,122	21	153	-	-	-	-
22	23.1	Glass and glass products.....	4,906	4,881	5	20	-	-	-	-
23	23.2-9	Refractory products, cut, shaped and finished stone.....	34,390	34,241	15	133	-	-	-	-
24	24	Basic metals.....	42,741	42,328	83	161	48	95	26	-
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	37,609	37,395	78	135	-	-	-	-
26	24.4	Basic precious and other non-ferrous metals.....	3,245	3,062	2	12	48	95	26	-
27	24.5	Casting services of metal.....	1,887	1,871	2	14	-	-	-	-
28	25	Fabricated metal products, except machinery and equipment.....	3,660	3,636	7	17	-	-	-	-
29	26	Computer, electronic and optical products.....	982	700	1	84	14	151	20	12
30	27	Electrical equipment.....	1,536	773	1	6	-	-	756	-
31	28	Machinery and equipment n.e.c.....	2,600	2,579	4	17	-	-	-	-
32	29	Motor vehicles, trailers and semi-trailers.....	3,605	3,577	5	23	-	-	-	-
33	30	Other transport equipment.....	655	649	1	5	-	-	-	-
34	31-32	Furniture, other manufacture goods.....	1,210	1,198	5	6	-	-	-	-
35	33	Repair and installation services of machinery and equipment.....	408	404	1	3	-	-	-	-
36	D (35)	Electricity, gas, steam and air conditioning.....	403,348	396,605	4,011	2,732	-	-	-	-
37	35.1/3	Electricity, transmission and distribution services, steam.....	400,009	394,612	2,676	2,721	-	-	-	-
38	35.2	Manufactured gas; distribution services of gaseous fuels through mains.....	3,339	1,993	1,335	11	-	-	-	-
39	E	Water supply; sewerage, waste management and remediation services.....	31,753	6,578	10,377	993	11,235	8	2,563	-
40	36	Natural water; water treatment and supply services.....	81	79	0	2	-	-	-	-
41	37-39	Sewerage services; waste collection and materials recovery services.....	31,672	6,499	10,377	991	11,235	8	2,563	-
42	37	Sewerage services, sewerage sludge.....	456	449	0	7	-	-	-	-
43	38-39	Waste collection, treatment and disposal services.....	31,216	6,050	10,377	984	11,235	8	2,563	-
44	F	Constructions and construction works.....	9,493	9,374	10	108	-	-	-	-
45	41-42	Building and building construction works.....	3,785	3,740	3	42	-	-	-	-
46	43	Specialised construction works.....	5,708	5,634	7	67	-	-	-	-
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	18,612	18,401	46	166	-	-	-	-
48	45	Wholesale and retail trade and repair services of motor vehicles.....	1,824	1,805	7	12	-	-	-	-
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	7,223	7,093	9	121	-	-	-	-
50	47	Retail trade services, except of motor vehicles and motorcycles.....	9,565	9,503	30	33	-	-	-	-
51	H	Transportation and storage services.....	88,768	84,798	2,994	976	-	-	-	-
52	49.1-2	Passenger rail transport services, freight rail transport services.....	1,102	1,099	1	3	-	-	-	-
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	19,636	16,425	2,975	236	-	-	-	-
54	50	Water transport services.....	27,649	27,296	9	344	-	-	-	-
55	51	Air transport services.....	26,919	26,664	2	253	-	-	-	-
56	52	Warehousing and support services for transportation.....	9,485	9,408	5	72	-	-	-	-
57	53	Postal and courier services.....	3,977	3,907	2	67	-	-	-	-
58	I	Accommodation and food services.....	3,144	3,123	12	9	-	-	-	-
59	J	Information and communication services.....	3,413	3,367	9	37	-	-	-	-
60	K	Financial and insurance services.....	1,631	1,617	9	5	-	-	-	-
61	L	Real estate services.....	1,105	1,097	2	7	-	-	-	-
62	M	Professional, scientific and technical services.....	8,713	8,544	15	53	-	-	100	-
63	N	Administrative and support services.....	1,353	1,340	6	7	-	-	-	-
64	O	Public administration and defence services; compulsory social security services.....	6,731	6,628	69	34	-	-	-	-
65	P	Education services.....	3,593	3,546	38	9	-	-	-	-
66	Q	Human health and social work services.....	7,188	7,016	75	97	-	-	-	-
67	R-T	Other services.....	6,269	6,184	40	44	-	-	-	-
68		All homogeneous branches.....	858,570	750,417	54,260	38,710	11,356	254	3,562	12
69		Private households.....	210,931	208,515	1,384	1,032	-	-	-	-
70		All homogeneous branches and private households 3.....	1,069,504	958,933	55,644	39,742	11,357	255	3,562	12
71		Transitional balance 4.....	-58,650	-58,050	-25	-575	-	-	-	-
72		Total emissions (gross domestic emissions).....	1,010,853	900,883	55,618	39,167	11,357	255	3,562	12
73		Emissions/Absorptions from LULUCF 5.....	-14,580	-16,301	867	855	-	-	-	-
74		Total emissions (net domestic emissions).....	996,273	884,582	56,485	40,022	11,357	255	3,562	12

Table 4.1.2: Direct emissions of greenhouse gases (including emissions from biomass)
CO₂ equivalent (1,000 tonnes (Gg))

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	79,498	74,868	75,972	77,703	79,448	79,768	81,202	81,864
2	01	Products of agriculture, hunting and related services.....	78,889	74,256	75,436	77,154	79,005	79,319	80,741	81,400
3	02	Products of forestry, logging and related services.....	556	559	479	497	393	398	408	415
4	03	Fish and other fishing products; aquaculture products.....	53	53	56	53	49	50	53	49
5	B	Mining and quarrying.....	22,427	14,433	8,111	9,172	7,582	7,215	5,994	6,249
6	05	Coal and lignite.....	17,610	9,025	4,777	6,209	4,825	4,325	3,595	3,840
7	06	Crude petroleum and natural gas.....	3,212	4,154	2,272	2,016	1,913	1,945	1,666	1,551
8	07-09	Metal ores, other mining and quarrying products, mining support services.....	1,605	1,254	1,062	947	844	944	733	858
9	C	Manufactured products.....	204,154	190,211	183,246	182,232	174,952	174,723	175,212	175,345
10	10-12	Food products, beverages, tobacco products.....	10,650	9,578	9,743	9,126	9,220	9,005	9,254	8,901
11	13-15	Textiles, wearing apparel, leather and related products.....	1,785	1,534	867	823	798	832	789	781
12	16	Wood and products of wood and cork, except furniture.....	1,838	3,939	5,387	6,734	4,116	4,707	6,515	6,100
13	17	Paper and paper products.....	9,026	15,388	11,185	9,881	9,500	9,875	9,743	10,055
14	18	Printing and recording services.....	813	1,010	873	773	825	834	784	798
15	19	Coke and refined petroleum products.....	25,582	25,489	23,248	23,231	23,227	22,844	21,956	22,618
16	19.1	Coke oven products.....	5,973	3,725	3,746	4,286	4,573	4,638	4,864	5,017
17	19.2	Refined petroleum products.....	19,609	21,764	19,502	18,945	18,654	18,206	17,092	17,601
18	20	Chemicals and chemical products.....	33,263	31,017	29,962	30,809	30,304	29,553	27,516	26,459
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	2,665	711	792	967	1,063	1,029	885	880
20	22	Rubber and plastic products.....	2,148	2,104	2,334	1,918	1,901	1,939	1,881	2,061
21	23	Other non-metallic mineral products.....	44,386	37,883	38,809	40,336	39,195	38,814	39,700	39,296
22	23.1	Glass and glass products.....	6,313	5,075	4,975	5,140	4,644	4,659	4,875	4,906
23	23.2-9	Refractory products, cut, shaped and finished stone.....	38,072	32,808	33,834	35,196	34,551	34,155	34,825	34,390
24	24	Basic metals.....	55,996	46,088	44,589	42,548	39,891	40,119	42,097	42,741
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	49,068	39,361	39,191	37,151	34,684	35,267	37,234	37,609
26	24.4	Basic precious and other non-ferrous metals.....	4,919	4,868	3,173	3,075	2,992	3,097	3,408	3,245
27	24.5	Casting services of metal.....	2,009	1,860	2,225	2,321	2,215	1,755	1,455	1,887
28	25	Fabricated metal products, except machinery and equipment.....	3,620	3,548	3,715	3,702	3,483	3,602	3,363	3,660
29	26	Computer, electronic and optical products.....	1,730	1,312	1,054	1,101	1,090	1,103	1,034	982
30	27	Electrical equipment.....	1,807	1,448	1,402	1,418	1,274	1,332	1,440	1,536
31	28	Machinery and equipment n.e.c.....	3,126	3,169	3,048	2,837	2,930	2,901	2,632	2,600
32	29	Motor vehicles, trailers and semi-trailers.....	3,849	3,971	3,722	3,651	3,695	3,752	3,378	3,605
33	30	Other transport equipment.....	651	602	720	605	637	696	643	655
34	31-32	Furniture, other manufacture goods.....	1,048	1,262	1,430	1,409	1,434	1,419	1,196	1,210
35	33	Repair and installation services of machinery and equipment.....	173	157	367	363	370	367	404	408
36	D (35)	Electricity, gas, steam and air conditioning.....	371,124	402,327	417,706	419,740	418,117	425,697	409,139	403,348
37	35.1/.3	Electricity, transmission and distribution services, steam.....	368,437	400,464	416,298	418,356	416,628	422,584	405,822	400,009
38	35.2	Manufactured gas; distribution services of gaseous fuels through mains.....	2,686	1,864	1,408	1,384	1,489	3,113	3,318	3,339
39	E	Water supply; sewerage, waste management and remediation services.....	45,034	39,127	34,532	34,231	33,325	32,688	31,971	31,753
40	36	Natural water; water treatment and supply services.....	37	42	83	77	74	77	79	81
41	37-39	Sewerage services; waste collection and materials recovery services.....	44,998	39,085	34,449	34,154	33,251	32,611	31,892	31,672
42	37	Sewerage services, sewerage sludge.....	681	453	463	439	426	433	447	456
43	38-39	Waste collection, treatment and disposal services; remediation services.....	44,317	38,633	33,986	33,715	32,824	32,178	31,445	31,216
44	F	Constructions and construction works.....	10,899	9,031	8,812	9,165	8,977	9,416	9,239	9,493
45	41-42	Building and building construction works.....	5,376	4,437	3,493	3,569	3,524	3,704	3,676	3,785
46	43	Specialised construction works.....	5,524	4,594	5,320	5,596	5,453	5,712	5,563	5,708
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	22,823	19,523	19,291	18,368	18,109	18,817	18,557	18,612
48	45	Wholesale and retail trade and repair services of motor vehicles.....	2,903	2,001	2,349	1,797	1,810	1,928	1,866	1,824
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	7,996	7,011	6,641	6,748	6,658	6,872	7,019	7,223
50	47	Retail trade services, except of motor vehicles and motorcycles.....	11,924	10,511	10,301	9,822	9,641	10,017	9,672	9,565
51	H	Transportation and storage services.....	57,879	78,727	85,566	81,169	86,350	88,589	86,767	88,768
52	49.1-2	Passenger rail transport services, interurban, freight rail transport services.....	2,310	1,688	1,329	1,334	1,207	1,211	1,120	1,102
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	12,723	16,515	18,965	19,642	19,609	19,812	19,322	19,636
54	50	Water transport services.....	5,868	19,852	26,513	22,475	26,101	26,971	26,018	27,649
55	51	Air transport services.....	23,867	27,627	26,567	25,916	27,902	27,966	27,186	26,919
56	52	Warehousing and support services for transportation.....	9,627	9,541	8,755	8,794	8,622	9,248	9,277	9,485
57	53	Postal and courier services.....	3,484	3,503	3,438	3,009	2,908	3,380	3,846	3,977
58	I	Accommodation and food services.....	4,524	4,175	3,960	3,721	3,676	3,838	3,340	3,144
59	J	Information and communication services.....	4,642	4,356	3,299	3,553	3,462	3,569	3,343	3,413
60	K	Financial and insurance services.....	2,121	1,975	1,856	1,642	1,678	1,892	1,663	1,631
61	L	Real estate services.....	899	1,125	1,086	1,050	1,073	1,103	1,066	1,105
62	M	Professional, scientific and technical services.....	8,366	8,073	8,671	8,257	8,233	8,563	8,506	8,713
63	N	Administrative and support services.....	1,027	1,170	1,051	1,037	1,009	1,084	1,262	1,353
64	O	Public administration and defence services; compulsory social security services.....	8,511	7,883	7,551	6,908	6,802	6,750	6,640	6,731
65	P	Education services.....	4,816	4,578	4,475	4,056	4,035	4,249	3,616	3,593
66	Q	Human health and social work services.....	6,423	5,816	7,192	6,552	6,716	6,943	6,875	7,188
67	R-T	Other services.....	9,974	7,254	6,587	6,028	6,138	6,107	6,163	6,269
68		All homogeneous branches.....	865,140	874,652	878,964	874,583	869,680	881,009	860,555	858,570
69		Private households.....	236,057	232,790	236,577	217,884	219,288	228,231	205,568	210,931
70		All homogeneous branches and private households 2.....	1,101,196	1,107,442	1,115,541	1,092,467	1,088,968	1,109,240	1,066,122	1,069,502
71		Transitional balance 3.....	-17,585	-48,361	-56,074	-51,768	-57,692	-57,867	-55,520	-58,650
72		Total emissions (gross domestic emissions).....	1,083,612	1,059,081	1,059,467	1,040,699	1,031,276	1,051,373	1,010,603	1,010,851
73		Emissions/Absorptions from LULUCF 4.....	-37,960	-12,060	-16,369	-15,733	-14,476	-14,335	-14,877	-14,580
74		Total emissions (net domestic emissions).....	1,045,651	1,047,021	1,043,098	1,024,966	1,016,800	1,037,037	995,725	996,271

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Residents concept, gross emissions.

3 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

4 Absorptions/emissions from land use, land use changes and forestry.

Table 4.2.1: Direct CO₂ emissions
1,000 tonnes (Gg)

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	14,609	13,630	15,271	15,618	17,563	16,950	17,265	17,697
2	01	Products of agriculture, hunting and related services.....	14,033	13,051	14,755	15,085	17,127	16,508	16,811	17,240
3	02	Products of forestry, logging and related services.....	523	527	460	481	387	393	403	409
4	03	Fish and other fishing products; aquaculture products.....	53	52	56	52	49	49	52	48
5	B	Mining and quarrying.....	5,163	6,473	4,479	5,724	3,271	3,454	3,032	3,000
6	05	Coal and lignite.....	1,035	1,439	1,396	3,003	760	793	841	791
7	06	Crude petroleum and natural gas.....	3,026	4,021	2,215	1,962	1,844	1,883	1,614	1,514
8	07-09	Metal ores, other mining and quarrying products, mining support services.....	1,102	1,013	868	758	667	778	578	695
9	C	Manufactured products.....	192,230	177,110	178,538	178,115	171,344	171,014	171,424	171,503
10	10-12	Food products, beverages, tobacco products.....	10,575	9,508	9,671	9,058	9,150	8,937	9,183	8,835
11	13-15	Textiles, wearing apparel, leather and related products.....	1,772	1,523	860	817	792	826	783	776
12	16	Wood and products of wood and cork, except furniture.....	1,782	3,861	5,284	6,609	4,030	4,608	6,395	5,986
13	17	Paper and paper products.....	8,950	15,297	11,103	9,807	9,432	9,805	9,673	9,987
14	18	Printing and recording services.....	808	1,005	869	769	821	829	780	794
15	19	Coke and refined petroleum products.....	25,180	25,147	22,929	22,921	22,914	22,540	21,654	22,315
16	19.1	Coke oven products.....	5,945	3,718	3,739	4,279	4,567	4,637	4,857	5,010
17	19.2	Refined petroleum products.....	19,235	21,429	19,191	18,642	18,347	17,909	16,797	17,305
18	20	Chemicals and chemical products.....	25,669	21,474	27,661	29,034	28,798	27,989	26,005	24,925
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	2,648	706	786	960	1,056	1,021	878	873
20	22	Rubber and plastic products.....	2,135	2,090	2,318	1,904	1,887	1,925	1,867	2,045
21	23	Other non-metallic mineral products.....	43,533	37,594	38,609	40,157	39,025	38,647	39,524	39,122
22	23.1	Glass and glass products.....	5,629	4,917	4,916	5,111	4,620	4,635	4,850	4,881
23	23.2-9	Refractory products, cut, shaped and finished stone.....	37,904	32,677	33,693	35,046	34,405	34,012	34,674	34,241
24	24	Basic metals.....	55,018	44,784	44,068	42,110	39,486	39,715	41,701	42,328
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	48,855	39,177	38,985	36,935	34,476	35,067	37,038	37,395
26	24.4	Basic precious and other non-ferrous metals.....	4,173	3,763	2,878	2,874	2,814	2,909	3,221	3,062
27	24.5	Casting services of metal.....	1,990	1,843	2,206	2,301	2,196	1,739	1,441	1,871
28	25	Fabricated metal products, except machinery and equipment.....	3,599	3,528	3,692	3,678	3,461	3,579	3,341	3,636
29	26	Computer, electronic and optical products.....	961	732	663	740	782	830	736	700
30	27	Electrical equipment.....	812	761	807	755	716	700	720	773
31	28	Machinery and equipment n.e.c.....	3,106	3,149	3,026	2,816	2,908	2,878	2,611	2,579
32	29	Motor vehicles, trailers and semi-trailers.....	3,827	3,947	3,696	3,625	3,667	3,723	3,352	3,577
33	30	Other transport equipment.....	646	598	715	600	632	691	637	649
34	31-32	Furniture, other manufacture goods.....	1,038	1,251	1,417	1,396	1,420	1,406	1,184	1,198
35	33	Repair and installation services of machinery and equipment.....	171	156	364	360	367	363	401	404
36	D (35)	Electricity, gas, steam and air conditioning.....	365,597	396,921	411,745	413,560	411,667	418,987	402,438	396,605
37	35.1/.3	Electricity, transmission and distribution services, steam.....	365,563	396,859	411,588	413,385	411,380	417,207	400,450	394,612
38	35.2	Manufactured gas; distribution services of gaseous fuels through mains.....	35	62	157	175	287	1,780	1,988	1,993
39	E	Water supply; sewerage, waste management and remediation services.....	8,188	6,986	7,006	7,045	6,579	6,742	6,504	6,578
40	36	Natural water; water treatment and supply services.....	36	41	82	76	73	75	77	79
41	37-39	Sewerage services; waste collection and materials recovery services.....	8,152	6,945	6,925	6,969	6,506	6,667	6,427	6,499
42	37	Sewerage services, sewerage sludge.....	676	448	457	433	420	426	440	449
43	38-39	Waste collection, treatment and disposal services; remediation services.....	7,477	6,497	6,468	6,536	6,086	6,241	5,987	6,050
44	F	Constructions and construction works.....	10,789	8,946	8,718	9,061	8,874	9,308	9,126	9,374
45	41-42	Building and building construction works.....	5,328	4,402	3,456	3,530	3,484	3,662	3,633	3,740
46	43	Specialised construction works.....	5,460	4,545	5,262	5,531	5,389	5,645	5,493	5,634
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	22,637	19,375	19,099	18,164	17,913	18,614	18,347	18,401
48	45	Wholesale and retail trade and repair services of motor vehicles.....	2,878	1,984	2,325	1,779	1,792	1,910	1,847	1,805
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	7,926	6,946	6,539	6,632	6,540	6,749	6,894	7,093
50	47	Retail trade services, except of motor vehicles and motorcycles.....	11,833	10,445	10,234	9,753	9,581	9,954	9,607	9,503
51	H	Transportation and storage services.....	54,991	75,416	81,861	77,432	82,491	84,639	82,833	84,798
52	49.1-2	Passenger rail transport services, interurban, freight rail transport services.....	2,300	1,683	1,324	1,329	1,203	1,207	1,116	1,099
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	10,185	13,768	15,974	16,566	16,481	16,622	16,120	16,425
54	50	Water transport services.....	5,805	19,610	26,176	22,192	25,772	26,629	25,687	27,296
55	51	Air transport services.....	23,646	27,372	26,314	25,669	27,637	27,701	26,928	26,664
56	52	Warehousing and support services for transportation.....	9,588	9,497	8,670	8,701	8,525	9,140	9,203	9,408
57	53	Postal and courier services.....	3,468	3,485	3,403	2,976	2,874	3,339	3,779	3,907
58	I	Accommodation and food services.....	4,485	4,147	3,937	3,695	3,653	3,816	3,316	3,123
59	J	Information and communication services.....	4,614	4,330	3,265	3,511	3,419	3,525	3,299	3,367
60	K	Financial and insurance services.....	2,106	1,963	1,842	1,628	1,664	1,877	1,649	1,617
61	L	Real estate services.....	889	1,118	1,079	1,042	1,065	1,095	1,058	1,097
62	M	Professional, scientific and technical services.....	8,165	7,894	8,516	8,101	8,077	8,404	8,346	8,544
63	N	Administrative and support services.....	1,018	1,163	1,043	1,027	999	1,073	1,249	1,340
64	O	Public administration and defence services; compulsory social security services.....	8,429	7,820	7,456	6,803	6,671	6,655	6,539	6,628
65	P	Education services.....	4,769	4,537	4,436	4,015	3,978	4,201	3,569	3,546
66	Q	Human health and social work services.....	6,105	5,648	7,032	6,389	6,535	6,785	6,712	7,016
67	R-T	Other services.....	9,904	7,197	6,525	5,963	6,044	6,029	6,079	6,184
68		All homogeneous branches.....	724,689	750,674	771,847	766,893	761,808	773,167	752,785	750,417
69		Private households.....	232,559	230,137	233,710	215,170	216,774	225,662	203,250	208,515
70		All homogeneous branches and private households 2.....	957,248	980,811	1,005,556	982,063	978,581	998,830	956,036	958,933
71		Transitional balance 3.....	-17,385	-47,890	-55,510	-51,255	-57,108	-57,271	-54,952	-58,050
72		Total emissions (gross domestic emissions) 4.....	939,863	932,921	950,046	930,807	921,474	941,559	901,084	900,883
73		Emissions/Absorptions from LULUCF 5.....	-39,633	-13,674	-18,045	-17,421	-16,178	-16,042	-16,589	-16,301
74		Total emissions (net domestic emissions).....	900,230	919,247	932,001	913,386	905,295	925,516	884,494	884,582

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Residents concept, gross emissions.

3 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

4 Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

5 Absorptions/emissions from land use, land use changes and forestry.

Table 4.2.2: Direct CO₂ emissions per unit energy consumption (not including road transport and biomass)

1,000 tonnes (Gg)

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	7,461	6,619	6,508	6,158	5,992	6,128	5,973	6,164
2	01	Products of agriculture, hunting and related services.....	7,033	6,199	6,183	5,848	5,763	5,891	5,722	5,908
3	02	Products of forestry, logging and related services.....	387	383	289	276	196	204	215	223
4	03	Fish and other fishing products; aquaculture products.....	41	37	36	34	33	33	36	32
5	B	Mining and quarrying.....	2,212	3,862	2,048	3,192	780	915	756	827
6	05	Coal and lignite.....	173	659	652	2,278	26	46	33	45
7	06	Crude petroleum and natural gas.....	1,204	2,344	684	282	198	211	271	286
8	07-09	Metal ores, other mining and quarrying products, mining support services.....	835	859	712	632	555	658	452	495
9	C	Manufactured products.....	126,764	111,588	116,107	114,744	111,031	110,794	108,972	109,250
10	10-12	Food products, beverages, tobacco products.....	9,990	8,884	8,614	8,366	8,351	8,186	8,141	8,061
11	13-15	Textiles, wearing apparel, leather and related products.....	1,644	1,433	793	750	726	706	715	706
12	16	Wood and products of wood and cork, except furniture.....	1,045	907	801	609	574	605	497	479
13	17	Paper and paper products.....	6,816	12,549	6,995	6,266	5,994	6,434	6,228	6,035
14	18	Printing and recording services.....	721	699	579	520	578	597	561	584
15	19	Coke and refined petroleum products.....	24,272	24,106	22,068	22,050	21,992	21,641	20,781	21,400
16	19.1	Coke oven products.....	5,945	3,716	3,737	4,278	4,566	4,630	4,856	5,009
17	19.2	Refined petroleum products.....	18,326	20,390	18,331	17,772	17,426	17,011	15,925	16,391
18	20	Chemicals and chemical products.....	16,604	12,205	18,412	20,340	20,016	19,315	19,217	18,807
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	2,540	580	588	742	843	804	668	643
20	22	Rubber and plastic products.....	1,908	1,740	2,096	1,673	1,604	1,675	1,597	1,651
21	23	Other non-metallic mineral products.....	20,193	15,732	18,408	18,474	17,732	18,112	18,491	18,483
22	23.1	Glass and glass products.....	4,743	4,028	4,057	4,116	3,768	3,745	3,868	3,877
23	23.2-9	Refractory products, cut, shaped and finished stone.....	15,450	11,705	14,351	14,358	13,964	14,367	14,623	14,606
24	24	Basic metals.....	31,183	23,254	27,267	25,977	23,796	23,559	24,156	24,034
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	26,799	19,384	23,313	22,004	19,968	20,173	20,823	20,449
26	24.4	Basic precious and other non-ferrous metals.....	2,463	2,095	1,821	1,749	1,712	1,724	1,974	1,795
27	24.5	Casting services of metal.....	1,920	1,775	2,132	2,224	2,116	1,661	1,359	1,789
28	25	Fabricated metal products, except machinery and equipment.....	2,991	2,793	2,875	2,785	2,668	2,755	2,501	2,774
29	26	Computer, electronic and optical products.....	719	527	371	446	484	526	424	384
30	27	Electrical equipment.....	496	410	536	480	432	438	449	497
31	28	Machinery and equipment n.e.c.....	2,438	2,458	2,356	2,103	2,147	2,117	1,822	1,783
32	29	Motor vehicles, trailers and semi-trailers.....	2,166	2,298	1,987	1,975	1,896	2,040	1,716	1,896
33	30	Other transport equipment.....	471	431	461	347	362	410	345	356
34	31-32	Furniture, other manufacture goods.....	565	573	668	618	607	599	410	422
35	33	Repair and installation services of machinery and equipment.....	1	9	233	224	228	222	254	257
36	D (35)	Electricity, gas, steam and air conditioning.....	354,804	372,090	355,881	353,358	364,666	369,028	350,061	343,275
37	35.1/.3	Electricity, transmission and distribution services, steam.....	354,804	372,076	355,849	353,330	364,650	369,018	350,056	343,271
38	35.2	Manufactured gas; distribution services of gaseous fuels through mains.....	0	14	31	28	16	10	6	4
39	E	Water supply; sewerage, waste management and remediation services.....	1,177	1,307	1,230	1,363	1,116	1,420	1,323	1,324
40	36	Natural water; water treatment and supply services.....	0	1	1	1	3	2	2	2
41	37-39	Sewerage services; waste collection and materials recovery services.....	1,177	1,306	1,229	1,363	1,113	1,417	1,321	1,322
42	37	Sewerage services, sewerage sludge.....	0	1	1	1	2	3	3	4
43	38-39	Waste collection, treatment and disposal services; remediation services.....	1,177	1,306	1,229	1,362	1,111	1,414	1,318	1,318
44	F	Constructions and construction works.....	6,569	5,561	5,231	5,240	5,015	5,312	5,035	5,171
45	41-42	Building and building construction works.....	3,246	2,720	2,308	2,269	2,144	2,234	2,166	2,238
46	43	Specialised construction works.....	3,322	2,841	2,922	2,971	2,871	3,078	2,869	2,933
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	12,216	9,525	9,384	8,517	8,246	8,969	8,550	8,374
48	45	Wholesale and retail trade and repair services of motor vehicles.....	2,089	1,209	1,369	1,245	1,283	1,402	1,332	1,276
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	2,876	2,097	1,304	1,207	1,160	1,415	1,513	1,590
50	47	Retail trade services, except of motor vehicles and motorcycles.....	7,250	6,219	6,711	6,066	5,802	6,152	5,706	5,508
51	H	Transportation and storage services.....	31,079	49,131	55,611	50,934	56,411	57,812	55,747	57,186
52	49.1-2	Passenger rail transport services, interurban, freight rail transport services.....	2,007	1,415	1,144	1,148	1,061	1,072	984	973
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	0	1,520	1,187	1,238	1,278	1,540	1,310	1,341
54	50	Water transport services.....	5,141	18,887	26,034	22,044	25,628	26,490	25,546	27,156
55	51	Air transport services.....	22,925	26,450	26,218	25,572	27,541	27,606	26,833	26,569
56	52	Warehousing and support services for transportation.....	761	642	826	766	738	916	787	823
57	53	Postal and courier services.....	245	217	203	167	166	188	288	324
58	I	Accommodation and food services.....	4,185	3,899	3,697	3,437	3,379	3,536	3,022	2,824
59	J	Information and communication services.....	1,440	1,620	1,434	1,316	1,315	1,442	1,205	1,233
60	K	Financial and insurance services.....	1,860	1,719	1,561	1,317	1,332	1,546	1,291	1,256
61	L	Real estate services.....	370	358	317	270	266	279	201	217
62	M	Professional, scientific and technical services.....	2,104	2,308	2,324	2,032	2,022	2,393	2,096	2,174
63	N	Administrative and support services.....	519	567	743	691	629	691	847	933
64	O	Public administration and defence services; compulsory social security services.....	6,612	6,049	5,255	4,556	3,835	4,087	3,886	3,932
65	P	Education services.....	4,673	4,417	4,208	3,764	3,525	3,851	3,202	3,169
66	Q	Human health and social work services.....	5,743	5,173	6,178	5,445	5,219	5,626	5,477	5,669
67	R-T	Other services.....	3,928	3,723	2,822	2,335	2,214	2,391	2,346	2,358
68		All homogeneous branches.....	573,717	589,515	580,538	568,671	576,991	586,220	559,991	555,335
69		Private households.....	113,004	106,719	102,541	87,332	91,491	97,512	80,248	83,141
70		All homogeneous branches and private households (residents concept) 2.....	686,721	696,235	683,078	656,003	668,482	683,732	640,239	638,475
71		Transitional balance 3.....	-17,173	-33,673	-39,787	-35,181	-41,508	-43,464	-41,618	-42,734
72		Total emissions (domestic concept) 2.....	669,548	662,561	643,292	620,822	626,975	640,268	598,621	595,742

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

3 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.2.3: Direct CO₂ process emissions

1,000 tonnes (Gg)

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	2,803	2,325	2,325	2,636	2,574	2,699	2,940	3,071
2	01	Products of agriculture, hunting and related services.....	2,803	2,325	2,325	2,636	2,574	2,699	2,940	3,071
3	02	Products of forestry, logging and related services.....	0	0	0	0	0	0	0	0
4	03	Fish and other fishing products; aquaculture products.....	0	0	0	0	0	0	0	0
5	B	Mining and quarrying.....	2,563	2,378	2,169	2,317	2,281	2,325	2,053	1,874
6	05	Coal and lignite.....	779	741	684	683	688	707	767	705
7	06	Crude petroleum and natural gas.....	1,785	1,637	1,485	1,634	1,593	1,618	1,286	1,170
8	07-09	Metal ores, other mining and quarrying products.....	0	0	0	0	0	0	0	0
9	C	Manufactured products.....	56,236	51,962	45,334	45,477	44,726	44,443	44,380	44,163
10	10-12	Food products, beverages, tobacco products.....	0	0	0	0	0	0	0	0
11	13-15	Textiles, wearing apparel, leather and related products.....	0	0	0	0	0	0	0	0
12	16	Wood and products of wood and cork, except furniture.....	0	0	0	0	0	0	0	0
13	17	Paper and paper products.....	0	0	0	0	0	0	0	0
14	18	Printing and recording services.....	0	225	218	181	174	166	151	141
15	19	Coke and refined petroleum products.....	749	848	679	665	679	669	636	675
16	19.1	Coke oven products.....	0	0	0	0	0	0	0	0
17	19.2	Refined petroleum products.....	749	848	679	665	679	669	636	675
18	20	Chemicals and chemical products.....	8,545	8,892	8,448	8,217	8,361	8,250	6,348	5,666
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	0	0	0	0	0	0	0	0
20	22	Rubber and plastic products.....	0	0	0	0	0	0	0	0
21	23	Other non-metallic mineral products.....	22,332	19,583	18,410	19,574	19,107	18,501	19,080	18,739
22	23.1	Glass and glass products.....	846	803	829	835	823	860	892	920
23	23.2-9	Refractory products, cut, shaped and finished stone.....	21,486	18,780	17,581	18,739	18,284	17,641	18,188	17,819
24	24	Basic metals.....	23,572	21,245	16,512	15,808	15,355	15,848	17,227	17,972
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	21,920	19,642	15,516	14,757	14,336	14,734	16,050	16,778
26	24.4	Basic precious and other non-ferrous metals.....	1,619	1,571	963	1,017	985	1,080	1,140	1,158
27	24.5	Casting services of metal.....	34	32	33	34	34	34	37	35
28	25	Fabricated metal products, except machinery and equipment.....	179	341	362	343	339	347	344	355
29	26	Computer, electronic and optical products.....	0	0	0	0	0	0	0	0
30	27	Electrical equipment.....	0	0	0	0	0	0	0	0
31	28	Machinery and equipment n.e.c.....	56	53	55	56	57	57	62	59
32	29	Motor vehicles, trailers and semi-trailers.....	747	723	596	575	596	548	471	498
33	30	Other transport equipment.....	56	53	55	56	57	57	62	59
34	31-32	Furniture, other manufacture goods.....	0	0	0	0	0	0	0	0
35	33	Repair and installation services of machinery and equipment.....	0	0	0	0	0	0	0	0
36	D (35)	Electricity, gas, steam and air conditioning.....	1	1	0	0	0	0	0	0
37	35.1/3	Electricity, transmission and distribution services, steam.....	0	0	0	0	0	0	0	0
38	35.2	Manufactured gas.....	1	1	0	0	0	0	0	0
39	E	Water supply; sewerage, waste management and remediation services.....	0	0	0	0	0	0	0	0
40	36	Natural water; water treatment and supply services.....	0	0	0	0	0	0	0	0
41	37-39	Sewerage services; waste collection and materials recovery services.....	0	0	0	0	0	0	0	0
42	37	Sewerage services, sewerage sludge.....	0	0	0	0	0	0	0	0
43	38-39	Waste collection, treatment and disposal services.....	0	0	0	0	0	0	0	0
44	F	Constructions and construction works.....	28	26	28	28	28	28	31	29
45	41-42	Building and building construction works.....	28	26	28	28	28	28	31	29
46	43	Specialised construction works.....	0	0	0	0	0	0	0	0
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	0	0	0	0	0	0	0	0
48	45	Wholesale and retail trade and repair services of motor vehicles.....	0	0	0	0	0	0	0	0
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	0	0	0	0	0	0	0	0
50	47	Retail trade services, except of motor vehicles and motorcycles.....	0	0	0	0	0	0	0	0
51	H	Transportation and storage services.....	85	80	84	85	86	86	93	89
52	49.1-2	Passenger rail transport services, freight rail transport services.....	17	16	17	17	17	17	18	18
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	12	11	12	12	12	12	13	12
54	50	Water transport services.....	28	26	28	28	28	28	31	29
55	51	Air transport services.....	28	26	28	28	28	28	31	29
56	52	Warehousing and support services for transportation.....	0	0	0	0	0	0	0	0
57	53	Postal and courier services.....	0	0	0	0	0	0	0	0
58	I	Accommodation and food services.....	0	0	0	0	0	0	0	0
59	J	Information and communication services.....	0	0	0	0	0	0	0	0
60	K	Financial and insurance services.....	0	0	0	0	0	0	0	0
61	L	Real estate services.....	0	0	0	0	0	0	0	0
62	M	Professional, scientific and technical services.....	0	0	0	0	0	0	0	0
63	N	Administrative and support services.....	0	0	0	0	0	0	0	0
64	O	Public administration and defence services.....	84	79	83	85	85	85	92	88
65	P	Education services.....	0	0	0	0	0	0	0	0
66	Q	Human health and social work services.....	0	0	0	0	0	0	0	0
67	R-T	Other services.....	0	2	3	3	3	3	3	3
68		All homogeneous branches.....	61,800	56,854	50,025	50,630	49,783	49,669	49,592	49,318
69		Private households.....	1,320	839	1,024	986	958	1,027	984	961
70		All homogeneous branches and private households.....	63,120	57,693	51,050	51,617	50,741	50,696	50,576	50,279

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

Table 4.2.4: Direct CO₂ emissions from utilisation of biomass (excluding road transport)

1,000 tonnes (Gg)

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	1,009	1,066	2,245	2,454	4,483	3,420	3,541	3,503
2	01	Products of agriculture, hunting and related services.....	1,009	1,061	2,229	2,438	4,471	3,408	3,528	3,491
3	02	Products of forestry, logging and related services.....	0	5	15	15	12	11	12	11
4	03	Fish and other fishing products; aquaculture products.....	0	0	1	1	1	1	1	1
5	B	Mining and quarrying.....	0	0	56	24	3	4	7	79
6	05	Coal and lignite.....	0	0	0	0	0	0	0	0
7	06	Crude petroleum and natural gas.....	0	0	0	0	0	0	0	0
8	07-09	Metal ores, other mining and quarrying products.....	0	0	56	24	3	4	7	79
9	C	Manufactured products.....	3,846	8,667	11,992	12,627	10,121	10,323	12,441	12,384
10	10-12	Food products, beverages, tobacco products.....	0	124	535	183	240	176	447	173
11	13-15	Textiles, wearing apparel, leather and related products.....	0	5	0	0	0	1	0	2
12	16	Wood and products of wood and cork, except furniture.....	637	2,878	4,414	5,934	3,385	3,928	5,821	5,429
13	17	Paper and paper products.....	2,003	2,646	3,988	3,426	3,319	3,254	3,325	3,830
14	18	Printing and recording services.....	0	1	0	0	0	1	1	1
15	19	Coke and refined petroleum products.....	0	0	0	0	0	0	0	0
16	19.1	Coke oven products.....	0	0	0	0	0	0	0	0
17	19.2	Refined petroleum products.....	0	0	0	0	0	0	0	0
18	20	Chemicals and chemical products.....	58	13	436	113	45	35	39	46
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	5	38	104	129	113	112	101	120
20	22	Rubber and plastic products.....	0	153	23	32	72	34	47	169
21	23	Other non-metallic mineral products.....	822	2,152	1,671	1,985	2,060	1,905	1,819	1,764
22	23.1	Glass and glass products.....	0	59	2	132	0	2	60	54
23	23.2-9	Refractory products, cut, shaped and finished stone.....	822	2,093	1,670	1,853	2,060	1,903	1,758	1,710
24	24	Basic metals.....	0	15	1	1	2	0	0	0
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	0	0	0	0	0	0	0	0
26	24.4	Basic precious and other non-ferrous metals.....	0	15	1	1	2	0	0	0
27	24.5	Casting services of metal.....	0	0	0	0	0	0	0	0
28	25	Fabricated metal products, except machinery and equipment.....	0	11	113	70	83	100	106	111
29	26	Computer, electronic and optical products.....	0	3	7	7	11	11	9	10
30	27	Electrical equipment.....	0	1	2	3	4	1	2	2
31	28	Machinery and equipment n.e.c.....	0	13	31	44	41	39	41	42
32	29	Motor vehicles, trailers and semi-trailers.....	0	45	28	31	48	27	20	23
33	30	Other transport equipment.....	0	0	1	1	2	3	2	2
34	31-32	Furniture, other manufacture goods.....	322	569	635	667	693	692	656	656
35	33	Repair and installation services of machinery and equipment.....	0	0	2	2	2	4	5	4
36	D (35)	Electricity, gas, steam and air conditioning.....	10,571	24,537	55,374	59,754	46,515	49,447	51,841	52,774
37	35.1/3	Electricity, transmission and distribution services, steam.....	10,571	24,536	55,313	59,681	46,323	47,734	49,918	50,847
38	35.2	Manufactured gas.....	0	1	61	73	192	1,712	1,922	1,927
39	E	Water supply; sewerage, waste management and remediation services.....	1,557	1,131	1,077	1,128	1,217	1,144	1,068	1,071
40	36	Natural water; water treatment and supply services.....	0	0	0	0	0	0	0	0
41	37-39	Sewerage services; waste collection and materials recovery services.....	1,557	1,131	1,077	1,128	1,217	1,144	1,068	1,071
42	37	Sewerage services, sewerage sludge.....	0	0	0	0	0	0	0	0
43	38-39	Waste collection, treatment and disposal services.....	1,557	1,131	1,077	1,128	1,217	1,144	1,068	1,071
44	F	Constructions and construction works.....	0	53	169	183	168	155	171	163
45	41-42	Building and building construction works.....	0	26	85	91	84	78	86	82
46	43	Specialised construction works.....	0	26	85	91	84	78	86	82
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	0	0	0	0	0	0	0	0
48	45	Wholesale and retail trade and repair services of motor vehicles.....	0	0	0	0	0	0	0	0
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	0	0	0	0	0	0	0	0
50	47	Retail trade services, except of motor vehicles and motorcycles.....	0	0	0	0	0	0	0	0
51	H	Transportation and storage services.....	0	47	116	122	113	102	101	92
52	49.1-2	Passenger rail transport services, freight rail transport services.....	0	28	67	68	62	56	53	46
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	0	0	0	0	0	0	0	0
54	50	Water transport services.....	0	19	49	54	50	46	48	46
55	51	Air transport services.....	0	0	0	0	0	0	0	0
56	52	Warehousing and support services for transportation.....	0	0	0	0	0	0	0	0
57	53	Postal and courier services.....	0	0	0	0	0	0	0	0
58	I	Accommodation and food services.....	0	0	0	0	0	0	0	0
59	J	Information and communication services.....	0	0	0	0	0	0	0	0
60	K	Financial and insurance services.....	0	0	0	0	0	0	0	0
61	L	Real estate services.....	0	0	0	0	0	0	0	0
62	M	Professional, scientific and technical services.....	0	0	0	0	0	0	0	0
63	N	Administrative and support services.....	0	0	0	0	0	0	0	0
64	O	Public administration and defence services.....	0	16	309	375	932	650	688	695
65	P	Education services.....	0	2	102	122	319	218	228	232
66	Q	Human health and social work services.....	0	4	163	195	511	348	364	440
67	R-T	Other services.....	0	3	153	183	479	327	342	348
68		All homogeneous branches.....	16,985	35,526	71,756	77,167	64,860	66,138	70,792	71,782
69		Private households.....	16,848	18,839	29,209	24,828	23,617	25,712	20,924	22,741
70		All homogeneous branches and private households.....	33,833	54,366	100,964	101,995	88,477	91,850	91,716	94,523

¹ Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

Table 4.2.5: Direct CO₂ emissions of road transport (excluding biodiesel) *

1,000 tonnes (Gg)

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	3,329	3,594	4,158	4,340	4,483	4,675	4,783	4,933
2	01	Products of agriculture, hunting and related services.....	3,182	3,443	3,987	4,136	4,291	4,484	4,595	4,745
3	02	Products of forestry, logging and related services.....	135	137	154	187	177	176	173	172
4	03	Fish and other fishing products; aquaculture products.....	12	14	18	17	15	15	15	15
5	B	Mining and quarrying.....	383	218	191	177	191	196	201	206
6	05	Coal and lignite.....	83	37	56	40	42	37	38	39
7	06	Crude petroleum and natural gas.....	37	38	42	43	49	51	53	54
8	07-09	Metal ores, other mining and quarrying products.....	263	143	93	94	101	108	110	113
9	C	Manufactured products.....	5,347	4,662	4,802	4,980	5,162	5,188	5,346	5,445
10	10-12	Food products, beverages, tobacco products.....	582	477	492	481	528	548	564	575
11	13-15	Textiles, wearing apparel, leather and related products.....	128	82	63	64	62	62	64	65
12	16	Wood and products of wood and cork, except furniture.....	99	73	65	63	67	71	73	74
13	17	Paper and paper products.....	130	98	112	109	112	111	114	117
14	18	Printing and recording services.....	86	76	68	63	65	62	64	65
15	19	Coke and refined petroleum products.....	159	183	171	194	229	218	225	229
16	19.1	Coke oven products.....	0	1	1	1	1	1	1	1
17	19.2	Refined petroleum products.....	159	182	170	193	228	217	224	228
18	20	Chemicals and chemical products.....	459	346	344	345	356	370	381	388
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	103	84	88	84	94	100	103	105
20	22	Rubber and plastic products.....	226	187	187	189	199	205	211	215
21	23	Other non-metallic mineral products.....	184	121	113	117	119	123	127	129
22	23.1	Glass and glass products.....	39	26	27	27	27	27	28	29
23	23.2-9	Refractory products, cut, shaped and finished stone.....	145	95	85	90	92	96	99	101
24	24	Basic metals.....	261	258	272	306	314	293	302	308
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	135	145	147	164	163	152	157	160
26	24.4	Basic precious and other non-ferrous metals.....	90	78	87	101	108	99	102	104
27	24.5	Casting services of metal.....	36	35	38	41	43	42	43	44
28	25	Fabricated metal products, except machinery and equipment.....	427	365	322	454	350	360	371	378
29	26	Computer, electronic and optical products.....	239	192	268	271	271	278	287	293
30	27	Electrical equipment.....	312	334	254	258	264	249	256	261
31	28	Machinery and equipment n.e.c.....	608	596	550	579	626	633	652	664
32	29	Motor vehicles, trailers and semi-trailers.....	907	840	1,018	988	1,064	1,055	1,087	1,108
33	30	Other transport equipment.....	118	108	186	185	199	210	217	221
34	31-32	Furniture, other manufacture goods.....	150	103	107	105	113	110	113	115
35	33	Repair and installation services of machinery and equipment.....	170	140	122	127	130	130	134	137
36	D (35)	Electricity, gas, steam and air conditioning.....	221	283	468	431	468	496	518	539
37	35.1/3	Electricity, transmission and distribution services, steam.....	187	238	406	360	392	441	460	479
38	35.2	Manufactured gas.....	34	45	62	71	76	55	58	60
39	E	Water supply; sewerage, waste management and remediation services.....	5,377	4,205	4,291	4,192	3,884	3,880	3,811	3,903
40	36	Natural water; water treatment and supply services.....	35	39	76	71	66	69	71	73
41	37-39	Sewerage services; waste collection and materials recovery services.....	5,342	4,166	4,215	4,122	3,819	3,811	3,740	3,831
42	37	Sewerage services, sewerage sludge.....	668	424	432	411	397	404	417	426
43	38-39	Waste collection, treatment and disposal services.....	4,674	3,742	3,784	3,711	3,422	3,407	3,323	3,404
44	F	Constructions and construction works.....	4,166	3,151	3,116	3,432	3,482	3,653	3,719	3,854
45	41-42	Building and building construction works.....	2,041	1,551	981	1,085	1,167	1,267	1,291	1,336
46	43	Specialised construction works.....	2,125	1,599	2,135	2,347	2,315	2,386	2,428	2,517
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	10,352	9,305	9,087	9,088	9,084	9,151	9,277	9,546
48	45	Wholesale and retail trade and repair services of motor vehicles.....	779	729	885	508	484	486	492	508
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	5,012	4,501	4,820	5,033	4,965	4,990	5,023	5,171
50	47	Retail trade services, except of motor vehicles and motorcycles.....	4,560	4,075	3,381	3,547	3,635	3,674	3,762	3,867
51	H	Transportation and storage services.....	23,428	24,472	23,920	24,310	23,755	24,852	25,075	25,753
52	49.1-2	Passenger rail transport services, freight rail transport services.....	272	206	87	87	56	57	55	57
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	9,947	11,451	13,515	14,122	13,895	13,998	13,717	14,075
54	50	Water transport services.....	634	621	60	60	58	59	57	59
55	51	Air transport services.....	691	820	62	62	61	61	59	61
56	52	Warehousing and support services for transportation.....	8,714	8,300	7,275	7,401	7,218	7,739	7,918	8,125
57	53	Postal and courier services.....	3,170	3,073	2,922	2,578	2,466	2,938	3,268	3,376
58	I	Accommodation and food services.....	300	241	230	247	263	270	282	288
59	J	Information and communication services.....	3,158	2,551	1,697	2,055	1,966	1,967	1,974	2,024
60	K	Financial and insurance services.....	244	234	266	295	316	316	340	345
61	L	Real estate services.....	518	729	729	741	767	787	825	850
62	M	Professional, scientific and technical services.....	6,046	5,400	5,923	5,821	5,810	5,792	6,011	6,150
63	N	Administrative and support services.....	488	566	283	319	352	366	383	390
64	O	Public administration and defence services.....	1,731	1,643	1,764	1,745	1,777	1,795	1,832	1,874
65	P	Education services.....	96	112	119	122	126	126	132	139
66	Q	Human health and social work services.....	360	457	658	715	770	779	834	872
67	R-T	Other services.....	5,920	3,307	3,362	3,276	3,187	3,170	3,241	3,340
68		All homogeneous branches.....	71,466	65,129	65,063	66,288	65,844	67,457	68,585	70,451
69		Private households.....	101,240	101,816	96,918	97,984	96,616	97,473	97,006	97,820
70		All homogeneous branches and private households (residents concept).....	172,706	166,945	161,981	164,273	162,460	164,931	165,591	168,271
71		Transitional balance 2.....	-212	-14,217	-15,723	-16,074	-15,600	-13,807	-13,334	-15,316
72		Total emissions (domestic concept).....	172,494	152,728	146,258	148,199	146,860	151,124	152,257	152,955

* Includes liquefied petroleum gas. Further tables for CO₂ emissions of road transport cf. "Tables on EEA", part 5, chapter 10: transport.¹ Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).² Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.2.6: Direct CO₂ emissions of road transport from biodiesel
1,000 tonnes (Gg)

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	5	26	34	31	31	28	28	26
2	01	Products of agriculture, hunting and related services.....	5	23	31	28	28	25	26	24
3	02	Products of forestry, logging and related services.....	0	2	3	3	3	2	3	2
4	03	Fish and other fishing products; aquaculture products.....	0	0	0	0	0	0	0	0
5	B	Mining and quarrying.....	5	15	16	14	17	14	15	14
6	05	Coal and lignite.....	0	2	5	3	4	3	3	3
7	06	Crude petroleum and natural gas.....	0	2	4	3	4	4	4	4
8	07-09	Metal ores, other mining and quarrying products.....	4	11	8	7	9	8	8	8
9	C	Manufactured products.....	38	231	302	287	304	266	285	261
10	10-12	Food products, beverages, tobacco products.....	4	23	31	28	31	28	30	28
11	13-15	Textiles, wearing apparel, leather and related products.....	1	4	4	4	4	3	3	3
12	16	Wood and products of wood and cork, except furniture.....	1	4	4	4	4	4	4	4
13	17	Paper and paper products.....	1	5	7	6	7	6	6	6
14	18	Printing and recording services.....	1	4	4	4	4	3	3	3
15	19	Coke and refined petroleum products.....	1	9	11	11	14	11	12	11
16	19.1	Coke oven products.....	0	0	0	0	0	0	0	0
17	19.2	Refined petroleum products.....	1	9	11	11	13	11	12	11
18	20	Chemicals and chemical products.....	3	17	21	20	21	19	20	19
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	0	4	5	5	6	5	5	5
20	22	Rubber and plastic products.....	2	9	12	11	12	11	11	10
21	23	Other non-metallic mineral products.....	1	6	7	7	7	6	7	6
22	23.1	Glass and glass products.....	0	1	2	2	2	1	1	1
23	23.2-9	Refractory products, cut, shaped and finished stone.....	1	5	5	5	5	5	5	5
24	24	Basic metals.....	2	13	17	18	18	15	16	15
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	1	7	9	9	10	8	8	8
26	24.4	Basic precious and other non-ferrous metals.....	1	4	5	6	6	5	5	5
27	24.5	Casting services of metal.....	0	2	2	2	3	2	2	2
28	25	Fabricated metal products, except machinery and equipment.....	3	19	20	26	21	18	20	18
29	26	Computer, electronic and optical products.....	3	10	17	16	16	14	15	14
30	27	Electrical equipment.....	3	17	16	15	16	13	14	12
31	28	Machinery and equipment n.e.c.....	4	29	34	33	37	32	35	32
32	29	Motor vehicles, trailers and semi-trailers.....	7	41	67	57	63	54	58	53
33	30	Other transport equipment.....	1	5	12	11	12	11	12	11
34	31-32	Furniture, other manufacture goods.....	1	5	7	6	7	6	6	6
35	33	Repair and installation services of machinery and equipment.....	0	7	8	7	8	7	7	7
36	D (35)	Electricity, gas, steam and air conditioning.....	1	10	21	16	17	16	18	17
37	35.1/.3	Electricity, transmission and distribution services, steam.....	1	9	19	13	14	14	16	15
38	35.2	Manufactured gas.....	0	2	3	3	3	2	2	2
39	E	Water supply; sewerage, waste management and remediation services.....	76	343	409	362	362	299	302	279
40	36	Natural water; water treatment and supply services.....	0	1	5	4	4	4	4	4
41	37-39	Sewerage services; waste collection and materials recovery services.....	76	342	404	357	357	295	298	275
42	37	Sewerage services, sewerage sludge.....	8	23	24	21	21	19	21	19
43	38-39	Waste collection, treatment and disposal services.....	68	318	379	336	336	276	277	256
44	F	Constructions and construction works.....	26	156	175	178	181	159	170	157
45	41-42	Building and building construction works.....	13	78	55	56	61	56	59	55
46	43	Specialised construction works.....	13	78	120	121	120	103	110	102
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	69	546	628	559	584	494	520	481
48	45	Wholesale and retail trade and repair services of motor vehicles.....	10	46	71	26	26	22	23	21
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	37	348	415	393	414	344	358	332
50	47	Retail trade services, except of motor vehicles and motorcycles.....	22	152	142	140	143	128	138	128
51	H	Transportation and storage services.....	399	1,686	2,130	1,981	2,127	1,787	1,817	1,679
52	49.1-2	Passenger rail transport services, freight rail transport services.....	4	19	10	9	6	5	5	5
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	227	785	1,260	1,194	1,296	1,072	1,079	997
54	50	Water transport services.....	1	57	7	6	6	5	5	5
55	51	Air transport services.....	2	76	7	6	7	6	6	5
56	52	Warehousing and support services for transportation.....	113	555	568	535	570	486	498	460
57	53	Postal and courier services.....	52	194	279	231	241	213	224	207
58	I	Accommodation and food services.....	0	7	10	11	11	10	11	11
59	J	Information and communication services.....	16	158	134	140	138	117	120	111
60	K	Financial and insurance services.....	1	10	15	16	16	15	17	15
61	L	Real estate services.....	1	31	33	31	32	29	32	30
62	M	Professional, scientific and technical services.....	14	186	269	248	245	218	239	220
63	N	Administrative and support services.....	11	30	17	17	19	17	18	17
64	O	Public administration and defence services.....	2	33	46	41	42	37	41	37
65	P	Education services.....	0	6	7	7	7	6	7	6
66	Q	Human health and social work services.....	1	14	32	33	36	33	37	35
67	R-T	Other services.....	56	162	186	166	161	139	148	136
68		All homogeneous branches.....	721	3,650	4,464	4,136	4,329	3,683	3,825	3,531
69		Private households.....	148	1,924	4,018	4,039	4,092	3,937	4,088	3,853
70		All homogeneous branches and private households.....	869	5,573	8,483	8,175	8,421	7,621	7,913	7,384

¹ Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

Table 4.2.7: International comparison – CO₂ emissions 1990 and 2014

No.	Country	1990 ¹	2014 ²	Change in 2014 as against 1990	Emissions 2014 per inhabitant
		mn tonnes		%	tonnes/inhabitant
1	European Union (28).....	4,437.0	
2	Belgium.....	120.0	97.2	-19.0	8.7
3	Bulgaria.....	80.2	51.2	-36.2	7.1
4	Denmark.....	54.2	40.0	-26.2	7.1
5	Germany.....	1,042.1	767.1	-26.4	9.5
6	Estonia.....	36.7	19.4	-47.1	14.8
7	Finland.....	56.6	54.8	-3.3	10.0
8	France.....	398.8	323.7	-18.8	4.9
9	Greece.....	83.0	71.1	-14.3	6.5
10	United Kingdom.....	591.5	415.4	-29.8	6.4
11	Ireland.....	32.4	34.6	6.7	7.5
12	Italy.....	434.7	337.6	-22.3	5.5
13	Croatia.....	23.3	20.7	-11.3	4.9
14	Latvia.....	19.1	7.5	-60.6	3.8
15	Lithuania.....	35.8	12.3	-65.6	4.2
16	Luxembourg.....	12.0	10.4	-13.0	18.7
17	Malta.....	1.9	2.4	28.5	5.6
18	Netherlands.....	159.2	158.1	-0.7	9.4
19	Austria.....	62.0	69.8	12.5	8.2
20	Poland.....	374.8	298.1	-20.5	7.8
21	Portugal.....	45.0	48.3	7.3	4.6
22	Romania.....	178.1	78.3	-56.0	3.9
23	Sweden.....	57.1	44.3	-22.5	4.6
24	Slovak Republic.....	61.8	34.7	-43.9	6.4
25	Slovenia.....	14.8	16.7	12.9	8.1
26	Spain.....	227.5	241.6	6.2	5.2
27	Czech Republic.....	164.7	111.7	-32.2	10.6
28	Hungary.....	72.5	43.7	-39.7	4.4
29	Cyprus.....	4.6	7.2	55.6	6.2
30	Iceland.....	2.2	3.8	75.9	11.6
31	Norway.....	34.8	44.4	27.5	8.6
32	Russia.....	2,505.4	1,766.4	-29.5	12.3
33	Switzerland.....	44.6	40.2	-9.9	4.9
34	Turkey.....	141.6	352.2	148.8	4.6
35	Ukraine.....	718.9	249.1	-65.3	5.5
36	Australia.....	276.1	409.4	48.3	17.4
37	Japan.....	1,141.1	1,278.9	12.1	10.1
38	Canada.....	459.0	566.0	23.3	15.9
39	New Zealand.....	24.9	34.1	36.9	7.6
40	United States of America.....	5,100.6	5,334.5	4.6	16.7
41	China.....	-	10,540.8		7.7

1 Source: UNFCCC 2013

2 Source: <https://www.co2online.de/klima-schuetzen/klimabilanz/die-groessten-co2-emittenten/> call: 2017_12_05

Table 4.2.8: Total supply of CO₂ emissions and CO₂ content of goods by final use categories

No.	Specification	2008	2013	Change in 2013 as against 2008
		CO ₂ emissions 1,000 tonnes		in percent
1	Of domestic origin.....	1,014,792	1,000,066	-1.5
2	Domestic production 1.....	791,299	774,518	-2.1
3	Private households.....	223,493	225,548	0.9
4	+ Imports 2.....	431,034	463,703	7.6
5	= Supply.....	1,445,826	1,463,769	1.2
6	= Final use.....	1,445,826	1,463,769	1.2
7	- Exports 2.....	523,501	552,240	5.5
8	= Final domestic use.....	922,325	911,529	-1.2
9	Domestic final consumption of private households 3.....	637,817	663,716	4.1
10	direct.....	223,493	225,548	0.9
11	CO2 content of consumer goods.....	414,324	438,168	5.8
12	Other final uses.....	284,508	247,813	-12.9
		Macroeconomic reference data EUR bn at current prices ⁴		
13	Of domestic origin.....	4,853.5	5,370.3	10.6
14	+ Imports 2.....	782.2	849.3	8.6
15	= Supply.....	5,635.6	6,219.6	10.4
16	- Intermediate consumption.....	2,570.3	2,762.5	7.5
17	= Final use 3.....	3,065.3	3,457.1	12.8
18	- Exports 2.....	973.5	1,059.7	8.9
19	= Final domestic uses.....	2,091.8	2,397.5	14.6
20	Domestic final consumption of private households	1,165.4	1,306.7	12.1
21	Consumption expenditure of non-profit institutions serving households.....	35.2	51.5	46.4
22	Government final consumption expenditure.....	446.7	535.7	19.9
23	Gross fixed capital formation.....	425.8	510.6	19.9
24	Changes in stocks, acquisitions less disposals of valuables.....	18.6	-7.2	-
		CO ₂ intensity CO ₂ emissions per macroeconomic reference data at current prices kg per EUR 1,000		
25	= Final use.....	471.7	423.4	X
26	- Exports 2.....	537.7	521.1	
27	= Final domestic use.....	440.9	380.2	
28	Consumer goods.....	355.5	335.3	
29	memorandum item: Imports 2.....	- 551.1	- 546.0	

1 Based on conceptual differences of bunkering there are discrepancies between the aggregates calculated by Destatis and the Federal Environment Agency.
Including CO₂ emissions from biomass.

2 Excl. re-exports.

3 Incl. Direct emissions.

4 At producer's prices excl. taxes on goods.

Table 4.2.9: CO₂ content of goods for final use 2013

No.	Goods groups	Total final use			including:	
		indirect ¹	direct ²	cumulated	Domestic final consumption of private households	Exports and ocean bunkering
					indirect	
1,000 tonnes						
1	Products of agriculture, hunting and related services.....	19,194	0	19,194	11,021	4,592
2	Products of forestry, logging and related services.....	425	25,451	25,877	376	82
3	Fish and other fishing products; aquaculture products.....	266	0	266	210	57
4	Hard coal.....	-238	788	550	19	7
5	Lignite.....	5	2,001	2,006	0	5
6	Crude petroleum and natural gas.....	4,828	54,425	59,253	4,248	0
7	Metal ores; Other mining and quarrying products; Mining support services.....	39	-	39	31	433
8	Food products; Beverages; Tobacco products.....	78,308	-	78,308	52,806	23,270
9	Textiles; Wearing apparel; Leather and related products.....	18,003	-	18,003	14,184	4,521
10	Wood, products of wood and cork, except furniture.....	8,244	-	8,244	1,718	3,935
11	Paper and paper products.....	26,394	-	26,394	6,244	20,790
12	Printing and recording services.....	2,322	-	2,322	1,290	1,086
13	Coke oven products.....	1,523	-	1,523	12	185
14	Refined petroleum products.....	30,922	142,882	173,804	21,552	9,124
15	Basic chemicals.....	71,744	-	71,744	1,317	73,918
16	Other chemical products.....	37,996	-	37,996	8,133	27,927
17	Pharmaceutical products.....	13,093	-	13,093	3,461	10,000
18	Rubber and plastics products.....	27,056	-	27,056	4,012	21,569
19	Glass and glass products.....	6,799	-	6,799	2,102	5,105
20	Ceramic products; Cut, shaped and finished stone.....	15,870	-	15,870	4,081	10,048
21	Basic iron and steel; other products of the first processing of steel.....	45,287	-	45,287	0	44,051
22	Aluminium.....	10,707	-	10,707	0	10,305
23	Other non-ferrous metals.....	8,308	-	8,308	0	8,463
24	Casting services of metals.....	1,021	-	1,021	0	211
25	Fabricated metal products.....	28,128	-	28,128	2,541	15,108
26	Computer, electronic and optical products.....	21,449	-	21,449	4,315	12,805
27	Electrical equipment.....	18,494	-	18,494	2,484	12,999
28	Machinery and equipment n.e.c.....	59,176	-	59,176	419	41,791
29	Motor vehicles, trailers and semi-trailers.....	94,680	-	94,680	20,969	64,882
30	Other transport equipment.....	9,506	-	9,506	805	7,531
31	Furniture; Other manufactured goods.....	18,393	-	18,393	7,721	6,061
32	Repair and installation services of machinery and equipment.....	5,577	-	5,577	135	848
33	Electricity, transmission and distribution services.....	149,481	-	149,481	88,820	44,587
34	Manufactured gas; distribution services of gaseous fuels through mains.....	345	-	345	18	0
35	Steam supply services.....	22,118	-	22,118	17,960	16
36	Natural water; water treatment and supply services.....	4,549	-	4,549	4,527	0
37	Sewerage, Waste management and remediation services.....	6,834	-	6,834	4,308	2,930
38	Buildings and building construction works.....	29,796	-	29,796	0	0
39	Specialised construction works.....	28,126	-	28,126	1,457	11
40	Wholesale and retail trade and repair services of motor vehicles.....	6,573	-	6,573	3,644	1,809
41	Wholesale trade services, except of motor vehicles and motorcycles.....	22,103	-	22,103	8,651	11,484
42	Retail trade services, except of motor vehicles and motorcycles.....	27,091	-	27,091	24,935	0
43	Rail transport services.....	3,735	-	3,735	2,977	389
44	Other land transport services.....	10,565	-	10,565	7,081	1,520
45	Water transport services.....	36,071	-	36,071	2,129	23,935
46	Air transport services.....	34,654	-	34,654	24,909	6,208
47	Warehousing and support services for transportation.....	3,468	-	3,468	887	1,902
48	Postal and courier services.....	996	-	996	639	356
49	Accommodation and food serving services.....	22,383	-	22,383	20,035	2,152
50	Publishing services.....	4,280	-	4,280	2,266	2,043
51	Motion picture, video and television programme services.....	1,992	-	1,992	762	240
52	Telecommunications services.....	5,743	-	5,743	5,133	590
53	Information services.....	2,180	-	2,180	18	667
54	Financial and insurance services.....	7,421	-	7,421	5,550	1,834
55	Real estate services.....	12,356	-	12,356	12,071	39
56	Legal and accounting services, business services, architectural services.....	5,397	-	5,397	428	2,698
57	Scientific research and development services.....	14,802	-	14,802	0	2,501
58	Advertising and market research services; Security.....	4,547	-	4,547	2,096	2,004
59	Public administration and defence services;.....	23,113	-	23,113	732	514
60	Compulsory social security services.....	2,008	-	2,008	0	0
61	Education services.....	13,068	-	13,068	1,557	5
62	Human health services.....	22,363	-	22,363	5,447	4
63	Residential care services; Social work services.....	10,068	-	10,068	1,846	0
64	Arts, entertainment and recreation services.....	6,585	-	6,585	3,611	62
65	Services furnished by membership organisations.....	2,522	-	2,522	163	2
66	Repair services of computers and personal and household goods.....	7,369	-	7,369	7,307	28
67	Total final domestic uses.....	1,238,221	225,548	1,463,769	438,168	552,240

¹ Excluding emissions of residents from transport of imported goods.

² Direct emissions of private households, including emissions from biomass.

³ Negative values because of depletion or decrease of resources.

Table 4.2.9: CO₂ content of goods for final use 2013

No.	Goods groups	Total final use			including:	
					Domestic final consumption of private households	Exports and ocean bunkering
		indirect ¹	direct ²	cumulated	indirect	
		percentage of total				
1	Products of agriculture, hunting and related services.....	1.6	0.0	1.3	2.5	0.8
2	Products of forestry, logging and related services.....	0.0	11.3	1.8	0.1	0.0
3	Fish and other fishing products; aquaculture products.....	0.0	0.0	0.0	0.0	0.0
4	Hard coal.....	0.0	0.3	0.0	0.0	0.0
5	Lignite.....	0.0	0.9	0.1	0.0	0.0
6	Crude petroleum and natural gas.....	0.4	24.1	4.0	1.0	0.0
7	Metal ores; Other mining and quarrying products; Mining support services.....	0.0	-	0.0	0.0	0.1
8	Food products; Beverages; Tobacco products.....	6.3	-	5.3	12.1	4.2
9	Textiles; Wearing apparel; Leather and related products.....	1.5	-	1.2	3.2	0.8
10	Wood, products of wood and cork, except furniture.....	0.7	-	0.6	0.4	0.7
11	Paper and paper products.....	2.1	-	1.8	1.4	3.8
12	Printing and recording services.....	0.2	-	0.2	0.3	0.2
13	Coke oven products.....	0.1	-	0.1	0.0	0.0
14	Refined petroleum products.....	2.5	63.3	11.9	4.9	1.7
15	Basic chemicals.....	5.8	-	4.9	0.3	13.4
16	Other chemical products.....	3.1	-	2.6	1.9	5.1
17	Pharmaceutical products.....	1.1	-	0.9	0.8	1.8
18	Rubber and plastics products.....	2.2	-	1.8	0.9	3.9
19	Glass and glass products.....	0.5	-	0.5	0.5	0.9
20	Ceramic products; Cut, shaped and finished stone.....	1.3	-	1.1	0.9	1.8
21	Basic iron and steel; other products of the first processing of steel.....	3.7	-	3.1	0.0	8.0
22	Aluminium.....	0.9	-	0.7	0.0	1.9
23	Other non-ferrous metals.....	0.7	-	0.6	0.0	1.5
24	Casting services of metals.....	0.1	-	0.1	0.0	0.0
25	Fabricated metal products.....	2.3	-	1.9	0.6	2.7
26	Computer, electronic and optical products.....	1.7	-	1.5	1.0	2.3
27	Electrical equipment.....	1.5	-	1.3	0.6	2.4
28	Machinery and equipment n.e.c.....	4.8	-	4.0	0.1	7.6
29	Motor vehicles, trailers and semi-trailers.....	7.6	-	6.5	4.8	11.7
30	Other transport equipment.....	0.8	-	0.6	0.2	1.4
31	Furniture; Other manufactured goods.....	1.5	-	1.3	1.8	1.1
32	Repair and installation services of machinery and equipment.....	0.5	-	0.4	0.0	0.2
33	Electricity, transmission and distribution services.....	12.1	-	10.2	20.3	8.1
34	Manufactured gas; distribution services of gaseous fuels through mains.....	0.0	-	0.0	0.0	0.0
35	Steam supply services.....	1.8	-	1.5	4.1	0.0
36	Natural water; water treatment and supply services.....	0.4	-	0.3	1.0	0.0
37	Sewerage, Waste management and remediation services.....	0.6	-	0.5	1.0	0.5
38	Buildings and building construction works.....	2.4	-	2.0	0.0	0.0
39	Specialised construction works.....	2.3	-	1.9	0.3	0.0
40	Wholesale and retail trade and repair services of motor vehicles.....	0.5	-	0.4	0.8	0.3
41	Wholesale trade services, except of motor vehicles and motorcycles.....	1.8	-	1.5	2.0	2.1
42	Retail trade services, except of motor vehicles and motorcycles.....	2.2	-	1.9	5.7	0.0
43	Rail transport services.....	0.3	-	0.3	0.7	0.1
44	Other land transport services.....	0.9	-	0.7	1.6	0.3
45	Water transport services.....	2.9	-	2.5	0.5	4.3
46	Air transport services.....	2.8	-	2.4	5.7	1.1
47	Warehousing and support services for transportation.....	2.8	-	0.2	0.2	0.3
48	Postal and courier services.....	0.3	-	0.1	0.1	0.1
49	Accommodation and food serving services.....	0.1	-	1.5	4.6	0.4
50	Publishing services.....	1.8	-	0.3	0.5	0.4
51	Motion picture, video and television programme services.....	0.3	-	0.1	0.2	0.0
52	Telecommunications services.....	0.2	-	0.4	1.2	0.1
53	Information services.....	0.5	-	0.1	0.0	0.1
54	Financial and insurance services.....	0.2	-	0.5	1.3	0.3
55	Real estate services.....	0.6	-	0.8	2.8	0.0
56	Legal and accounting services, business services, architectural services.....	1.0	-	0.4	0.1	0.5
57	Scientific research and development services.....	0.4	-	1.0	0.0	0.5
58	Advertising and market research services; Security.....	1.2	-	0.3	0.5	0.4
59	Public administration and defence services;.....	0.4	-	1.6	0.2	0.1
60	Compulsory social security services.....	1.9	-	0.1	0.0	0.0
61	Education services.....	0.2	-	0.9	0.4	0.0
62	Human health services.....	1.1	-	1.5	1.2	0.0
63	Residential care services; Social work services.....	1.8	-	0.7	0.4	0.0
64	Arts, entertainment and recreation services.....	0.8	-	0.4	0.8	0.0
65	Services furnished by membership organisations.....	0.5	-	0.2	0.0	0.0
66	Repair services of computers and personal and household goods.....	0.2	-	0.5	1.7	0.0
67	Total final domestic uses.....	100	100	100	100	100

1 Excluding emissions of residents from transport of imported goods.

2 Direct emissions of private households, including emissions from biomass.

3 Negative values because of depletion or decrease of resources.

Table 4.2.10: CO₂ emissions of industries on the national territory and abroad at the production of goods for final use 2013

No.	Goods groups	Final use							
		Domestic	including:	Imports	Total ²	Domestic	including:	Imports	Total
			Exports ¹				Exports Domestic = 100		
		1,000 tonnes				percentage of total			
1	Products of agriculture, hunting and related services.....	16,434	5,592	13,250	29,684	55.4	34.0	44.6	100
2	Products of forestry, logging and related services.....	377	139	867	1,244	30.3	36.7	69.7	100
3	Fish and other fishing products; aquaculture products.....	82	33	205	287	28.7	40.2	71.3	100
4	Hard coal.....	748	394	3,995	4,743	15.8	52.6	84.2	100
5	Lignite.....	32	13	222	253	12.5	42.1	87.5	100
6	Crude petroleum and natural gas.....	2,166	643	33,800	35,966	6.0	29.7	94.0	100
7	Metal ores; Other mining and quarrying products; Mining support services.....	808	484	3,450	4,259	19.0	59.8	81.0	100
8	Food products; Beverages; Tobacco products.....	9,083	2,994	4,780	13,863	65.5	33.0	34.5	100
9	Textiles; Wearing apparel; Leather and related products.....	825	510	2,121	2,945	28.0	61.8	72.0	100
10	Wood, products of wood and cork, except furniture.....	4,448	1,879	2,535	6,984	63.7	42.3	36.3	100
11	Paper and paper products.....	10,058	7,062	9,722	19,780	50.8	70.2	49.2	100
12	Printing and recording services.....	861	319	312	1,172	73.4	37.1	26.6	100
13	Coke oven products.....	4,632	3,319	4,917	9,549	48.5	71.7	51.5	100
14	Refined petroleum products.....	19,175	8,137	18,374	37,549	51.1	42.4	48.9	100
15	Basic chemicals.....	23,557	23,203	41,824	65,381	36.0	98.5	64.0	100
16	Other chemical products.....	3,146	2,453	2,889	6,035	52.1	78.0	47.9	100
17	Pharmaceutical products.....	1,052	1,119	853	1,906	55.2	106.3	44.8	100
18	Rubber and plastics products.....	1,968	1,414	2,078	4,046	48.6	71.8	51.4	100
19	Glass and glass products.....	4,619	3,163	5,353	9,971	46.3	68.5	53.7	100
20	Ceramic products; Cut, shaped and finished stone.....	32,842	9,699	10,764	43,605	75.3	29.5	24.7	100
21	Basic iron and steel; other products of the first processing of steel.....	35,196	29,557	42,527	77,722	45.3	84.0	54.7	100
22	Aluminium.....	774	688	4,315	5,089	15.2	88.9	84.8	100
23	Other non-ferrous metals.....	1,017	930	4,287	5,303	19.2	91.5	80.8	100
24	Casting services of metals.....	1,741	1,170	747	2,488	70.0	67.2	30.0	100
25	Fabricated metal products.....	3,570	2,101	1,505	5,075	70.3	58.9	29.7	100
26	Computer, electronic and optical products.....	832	755	1,078	1,910	43.5	90.8	56.5	100
27	Electrical equipment.....	708	500	571	1,279	55.3	70.6	44.7	100
28	Machinery and equipment n.e.c.....	2,894	2,169	1,081	3,975	72.8	75.0	27.2	100
29	Motor vehicles, trailers and semi-trailers.....	3,815	2,846	1,510	5,325	71.6	74.6	28.4	100
30	Other transport equipment.....	689	581	329	1,018	67.7	84.3	32.3	100
31	Furniture; Other manufactured goods.....	1,492	693	784	2,276	65.5	46.5	34.5	100
32	Repair and installation services of machinery and equipment.....	362	149	222	584	62.0	41.0	38.0	100
33	Electricity, transmission and distribution services.....	372,191	156,596	147,739	519,930	71.6	42.1	28.4	100
34	Manufactured gas; distribution services of gaseous fuels through mains.....	2,583	1,224	477	3,060	84.4	47.4	15.6	100
35	Steam supply services.....	45,297	14,833	21,823	67,119	67.5	32.7	32.5	100
36	Natural water; water treatment and supply services.....	75	9	11	86	87.5	11.7	12.5	100
37	Sewerage, Waste management and remediation services.....	5,786	2,753	6,826	12,613	45.9	47.6	54.1	100
38	Buildings and building construction works.....	3,548	57	112	3,660	96.9	1.6	3.1	100
39	Specialised construction works.....	5,533	484	741	6,274	88.2	8.8	11.8	100
40	Wholesale and retail trade and repair services of motor vehicles.....	1,909	724	535	2,443	78.1	37.9	21.9	100
41	Wholesale trade services, except of motor vehicles and motorcycles.....	6,766	3,012	2,401	9,167	73.8	44.5	26.2	100
42	Retail trade services, except of motor vehicles and motorcycles.....	9,956	901	333	10,289	96.8	9.0	3.2	100
43	Rail transport services.....	583	294	383	967	60.3	50.4	39.7	100
44	Other land transport services.....	15,807	9,335	22,073	37,880	41.7	59.1	58.3	100
45	Water transport services.....	27,846	26,041	8,649	36,495	76.3	93.5	23.7	100
46	Air transport services.....	30,648	10,063	16,621	47,269	64.8	32.8	35.2	100
47	Warehousing and support services for transportation.....	9,173	4,032	5,147	14,320	64.1	44.0	35.9	100
48	Postal and courier services.....	3,350	1,080	837	4,187	80.0	32.2	20.0	100
49	Accommodation and food serving services.....	3,812	394	431	4,243	89.8	10.3	10.2	100
50	Publishing services.....	1,423	586	524	1,947	73.1	41.2	26.9	100
51	Motion picture, video and television programme services.....	127	21	29	155	81.4	16.4	18.6	100
52	Telecommunications services.....	1,318	241	333	1,651	79.8	18.3	20.2	100
53	Information services.....	663	226	375	1,038	63.9	34.1	36.1	100
54	Financial and insurance services.....	1,876	472	392	2,268	82.7	25.1	17.3	100
55	Real estate services.....	1,096	94	91	1,187	92.4	8.5	7.6	100
56	Legal and accounting services, business services, architectural services.....	6,414	2,761	2,569	8,983	71.4	43.0	28.6	100
57	Scientific research and development services.....	156	29	28	184	84.7	18.8	15.3	100
58	Advertising and market research services; Security.....	2,917	1,134	1,789	4,706	62.0	38.9	38.0	100
59	Public administration and defence services;.....	6,502	531	750	7,252	89.7	8.2	10.3	100
60	Compulsory social security services.....	159	1	1	160	99.4	0.6	0.6	100
61	Education services.....	4,194	78	58	4,252	98.6	1.9	1.4	100
62	Human health services.....	3,986	4	4	3,991	99.9	0.1	0.1	100
63	Residential care services; Social work services.....	2,791	0	0	2,791	100.0	0.0	0.0	100
64	Arts, entertainment and recreation services.....	2,529	103	150	2,679	94.4	4.1	5.6	100
65	Services furnished by membership organisations.....	597	39	46	643	92.8	6.6	7.2	100
66	Repair services of computers and personal and household goods.....	2,907	146	158	3,065	94.9	5.0	5.1	100
67	Total final domestic uses.....	774,518	353,006	463,703	1,238,221	62.6	45.6	37.4	100

1 Excl. re-exports.

2 Excluding emissions of residents from transport of imported goods.

Table 4.3.1: Direct CH₄ emissions

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	1,373,822	1,284,326	1,276,352	1,267,471	1,279,259	1,296,307	1,306,769	1,298,958
2	01	Products of agriculture, hunting and related services.....	1,372,598	1,283,163	1,275,726	1,266,989	1,279,152	1,296,221	1,306,677	1,298,870
3	02	Products of forestry, logging and related services.....	1,223	1,162	625	482	107	86	91	87
4	03	Fish and other fishing products; aquaculture products.....	1	1	1	0	0	0	0	0
5	B	Mining and quarrying.....	670,254	308,368	137,288	129,968	165,270	143,702	112,155	123,382
6	05	Coal and lignite.....	662,952	303,306	135,087	127,870	162,560	141,251	110,121	121,925
7	06	Crude petroleum and natural gas.....	7,258	5,016	2,151	2,060	2,678	2,407	1,997	1,415
8	07-09	Metal ores, other mining and quarrying products, mining support services.....	44	46	50	38	33	44	36	42
9	C	Manufactured products.....	43,867	42,380	40,223	40,260	38,759	38,603	39,450	39,599
10	10-12	Food products, beverages, tobacco products.....	740	749	769	737	732	760	803	759
11	13-15	Textiles, wearing apparel, leather and related products.....	130	120	77	75	68	70	69	69
12	16	Wood and products of wood and cork, except furniture.....	1,946	2,104	2,538	2,929	2,266	2,609	2,802	2,727
13	17	Paper and paper products.....	827	965	864	797	764	825	830	868
14	18	Printing and recording services.....	72	70	62	58	60	62	61	63
15	19	Coke and refined petroleum products.....	12,149	9,889	9,494	9,034	9,183	8,897	8,904	9,017
16	19.1	Coke oven products.....	327	29	31	23	17	17	18	19
17	19.2	Refined petroleum products.....	11,822	9,861	9,463	9,011	9,166	8,879	8,885	8,998
18	20	Chemicals and chemical products.....	22,496	23,474	20,889	20,801	20,011	19,816	20,624	20,679
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	112	59	68	76	82	81	75	74
20	22	Rubber and plastic products.....	159	184	200	188	168	176	191	205
21	23	Other non-metallic mineral products.....	864	809	840	880	838	827	841	825
22	23.1	Glass and glass products.....	245	238	229	241	209	206	220	215
23	23.2-9	Refractory products, cut, shaped and finished stone.....	619	571	611	639	629	621	621	610
24	24	Basic metals.....	3,323	2,883	3,349	3,635	3,578	3,439	3,275	3,311
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	3,119	2,713	3,181	3,464	3,412	3,276	3,115	3,132
26	24.4	Basic precious and other non-ferrous metals.....	93	81	79	77	75	74	101	81
27	24.5	Casting services of metal.....	111	88	88	93	91	89	58	98
28	25	Fabricated metal products, except machinery and equipment.....	246	255	280	280	258	270	266	275
29	26	Computer, electronic and optical products.....	74	57	39	49	49	53	46	43
30	27	Electrical equipment.....	46	32	46	45	38	40	42	48
31	28	Machinery and equipment n.e.c.....	194	220	206	186	186	189	171	168
32	29	Motor vehicles, trailers and semi-trailers.....	173	231	197	193	181	195	171	186
33	30	Other transport equipment.....	38	44	41	34	35	39	34	35
34	31-32	Furniture, other manufacture goods.....	277	232	242	245	240	235	218	215
35	33	Repair and installation services of machinery and equipment.....	2	2	21	19	21	21	27	31
36	D	Electricity, gas, steam and air conditioning.....	122,659	108,518	125,762	131,321	141,539	153,620	157,543	160,439
37	35.1/.3	Electricity, transmission and distribution services, steam.....	16,617	36,479	75,755	83,032	93,487	100,676	104,763	107,030
38	35.2	Manufactured gas; distribution services of gaseous fuels through mains.....	106,042	72,040	50,007	48,289	48,052	52,944	52,779	53,409
39	E	Water supply; sewerage, waste management and remediation services.....	1,116,866	817,849	557,154	525,106	495,449	463,381	439,462	415,065
40	36	Natural water; water treatment and supply services.....	2	2	1	1	2	1	1	1
41	37-39	Sewerage services; waste collection and materials recovery services.....	1,116,864	817,847	557,154	525,105	495,448	463,380	439,461	415,064
42	37	Sewerage services, sewerage sludge.....	10	8	4	4	4	4	4	4
43	38-39	Waste collection, treatment and disposal services.....	1,116,854	817,839	557,149	525,102	495,444	463,376	439,457	415,060
44	F	Constructions and construction works.....	760	549	440	479	397	411	417	396
45	41-42	Building and building construction works.....	363	250	164	170	140	137	139	129
46	43	Specialised construction works.....	397	299	275	309	258	274	279	266
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	3,368	2,201	1,913	2,069	1,665	1,743	1,973	1,835
48	45	Wholesale and retail trade and repair services of motor vehicles.....	426	254	269	291	261	273	303	276
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	925	546	307	362	265	298	369	374
50	47	Retail trade services, except of motor vehicles and motorcycles.....	2,016	1,401	1,338	1,415	1,139	1,171	1,300	1,185
51	H	Transportation and storage services.....	99,577	106,708	113,565	116,076	117,693	119,802	119,809	119,751
52	49.1-2	Passenger rail transport services, freight rail transport services.....	199	39	29	31	24	21	27	29
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	98,890	106,144	112,865	115,412	117,033	119,108	119,084	118,994
54	50	Water transport services.....	74	250	340	288	332	346	331	354
55	51	Air transport services.....	106	93	93	95	90	80	81	82
56	52	Warehousing and support services for transportation.....	237	130	189	200	169	197	197	195
57	53	Postal and courier services.....	70	51	49	51	45	49	90	96
58	I	Accommodation and food services.....	1,018	692	542	627	523	510	574	483
59	J	Information and communication services.....	322	308	317	362	330	336	349	348
60	K	Financial and insurance services.....	392	316	344	356	326	359	366	345
61	L	Real estate services.....	87	80	75	79	72	68	62	65
62	M	Professional, scientific and technical services.....	587	492	513	549	494	569	600	608
63	N	Administrative and support services.....	144	118	144	165	138	145	219	231
64	O	Public administration and defence services; compulsory social security services.....	1,542	1,273	2,231	2,479	3,965	2,545	2,740	2,746
65	P	Education services.....	1,413	1,228	1,144	1,251	1,897	1,535	1,557	1,521
66	Q	Human health and social work services.....	2,036	1,461	1,853	2,047	3,052	2,410	2,787	3,001
67	R-T	Other services.....	1,060	930	883	940	2,030	1,439	1,646	1,617
68		All homogeneous branches.....	3,439,774	2,677,797	2,260,744	2,221,606	2,252,859	2,227,485	2,188,476	2,170,390
69		Private households.....	70,384	62,638	70,836	64,947	59,410	60,404	52,851	55,361
70		All homogeneous branches and private households 2.....	3,510,159	2,740,434	2,331,580	2,286,553	2,312,268	2,287,889	2,241,328	2,225,751
71		Transitional balance 3.....	-627	-1,229	-1,092	-1,027	-1,052	-943	-884	-1,018
72		Total emissions (gross domestic emissions) 4.....	3,509,531	2,739,205	2,330,487	2,285,526	2,311,217	2,286,946	2,240,444	2,224,733
73		Emissions/Absorptions from LULUCF 5.....	34,850	34,629	34,717	34,659	34,678	34,640	34,600	34,667
74		Total emissions (net domestic emissions).....	3,544,381	2,773,834	2,365,204	2,320,184	2,345,895	2,321,586	2,275,043	2,259,400

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Residents concept, gross emissions.

3 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

4 Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

5 Absorptions/emissions from land use, land use changes and forestry.

Table 4.3.2: Direct CH₄ emissions per unit energy consumption (not including road transport)

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	2,557	2,109	3,661	3,967	11,663	7,550	7,909	7,696
2	01	Products of agriculture, hunting and related services.....	1,334	947	3,035	3,485	11,556	7,465	7,818	7,609
3	02	Products of forestry, logging and related services.....	1,222	1,161	625	482	106	85	91	87
4	03	Fish and other fishing products; aquaculture products.....	1	0	0	0	0	0	0	0
5	B	Mining and quarrying.....	146	138	121	73	40	63	56	63
6	05	Coal and lignite.....	61	9	47	26	1	12	11	12
7	06	Crude petroleum and natural gas.....	43	84	24	10	7	8	10	10
8	07-09	Metal ores, other mining and quarrying products.....	42	45	50	37	32	44	35	41
9	C	Manufactured products.....	8,678	8,492	9,216	9,563	9,091	9,055	9,041	9,073
10	10-12	Food products, beverages, tobacco products.....	505	679	716	679	678	706	751	714
11	13-15	Textiles, wearing apparel, leather and related products.....	103	116	71	68	63	64	63	63
12	16	Wood and products of wood and cork, except furniture.....	448	605	709	860	625	627	824	790
13	17	Paper and paper products.....	822	963	861	794	761	823	827	866
14	18	Printing and recording services.....	52	61	47	42	47	48	48	50
15	19	Coke and refined petroleum products.....	812	523	478	457	444	440	412	412
16	19.1	Coke oven products.....	327	29	31	23	17	17	18	19
17	19.2	Refined petroleum products.....	486	494	448	434	427	423	394	394
18	20	Chemicals and chemical products.....	1,034	1,010	1,310	1,365	1,279	1,271	1,268	1,263
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	110	58	67	75	81	80	74	74
20	22	Rubber and plastic products.....	116	148	146	130	127	131	133	153
21	23	Other non-metallic mineral products.....	862	807	839	879	836	824	839	822
22	23.1	Glass and glass products.....	245	238	229	241	209	205	219	215
23	23.2-9	Refractory products, cut, shaped and finished stone.....	617	569	610	638	627	619	620	608
24	24	Basic metals.....	2,957	2,565	3,062	3,336	3,292	3,152	2,988	3,025
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	2,821	2,426	2,923	3,200	3,158	3,021	2,862	2,878
26	24.4	Basic precious and other non-ferrous metals.....	90	78	76	73	72	71	96	75
27	24.5	Casting services of metal.....	46	61	63	64	62	60	31	72
28	25	Fabricated metal products, except machinery and equipment.....	179	219	218	213	202	210	205	217
29	26	Computer, electronic and optical products.....	34	37	27	37	38	42	35	32
30	27	Electrical equipment.....	31	24	37	35	30	31	34	40
31	28	Machinery and equipment n.e.c.....	154	199	179	160	163	165	147	145
32	29	Motor vehicles, trailers and semi-trailers.....	151	217	187	183	172	186	162	178
33	30	Other transport equipment.....	34	41	39	33	33	38	33	34
34	31-32	Furniture, other manufacture goods.....	275	220	202	201	202	199	179	179
35	33	Repair and installation services of machinery and equipment.....	0	1	20	18	18	18	18	16
36	D (35)	Electricity, gas, steam and air conditioning.....	16,611	36,473	75,872	83,173	94,095	106,500	111,310	113,586
37	35.1/.3	Electricity, transmission and distribution services, steam.....	16,611	36,473	75,751	83,029	93,474	100,660	104,748	107,015
38	35.2	Manufactured gas.....	0	0	121	144	620	5,840	6,562	6,572
39	E	Water supply; sewerage, waste management and remediation services.....	4,639	967	236	281	1,059	686	713	713
40	36	Natural water; water treatment and supply services.....	0	0	0	0	0	0	0	0
41	37-39	Sewerage services; waste collection and materials recovery services.....	4,639	967	236	281	1,059	686	713	713
42	37	Sewerage services, sewerage sludge.....	0	0	0	0	0	0	0	0
43	38-39	Waste collection, treatment and disposal services.....	4,639	967	236	281	1,059	686	713	713
44	F	Constructions and construction works.....	314	194	125	122	79	78	78	76
45	41-42	Building and building construction works.....	156	97	63	61	40	39	39	38
46	43	Specialised construction works.....	158	98	62	61	39	39	39	38
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	792	209	207	260	53	26	50	40
48	45	Wholesale and retail trade and repair services of motor vehicles.....	89	15	28	21	11	5	7	4
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	155	16	44	86	16	5	9	7
50	47	Retail trade services, except of motor vehicles and motorcycles.....	548	178	136	154	27	16	33	28
51	H	Transportation and storage services.....	372	663	686	647	680	729	658	687
52	49.1-2	Passenger rail transport services, freight rail transport services.....	188	30	22	24	17	16	14	14
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	0	290	230	240	242	287	234	239
54	50	Water transport services.....	73	250	339	288	332	346	331	354
55	51	Air transport services.....	105	92	93	95	88	78	78	78
56	52	Warehousing and support services for transportation.....	1	1	1	1	1	1	1	1
57	53	Postal and courier services.....	5	0	0	0	0	0	1	1
58	I	Accommodation and food services.....	209	51	52	68	22	13	83	42
59	J	Information and communication services.....	29	2	2	2	2	3	2	2
60	K	Financial and insurance services.....	38	2	3	2	2	3	2	2
61	L	Real estate services.....	7	0	1	0	0	0	0	0
62	M	Professional, scientific and technical services.....	37	4	5	5	5	6	5	5
63	N	Administrative and support services.....	7	1	1	1	1	1	1	2
64	O	Public administration and defence services.....	743	551	1,505	1,706	3,301	1,874	1,975	1,972
65	P	Education services.....	115	28	233	284	1,060	653	689	687
66	Q	Human health and social work services.....	444	125	490	571	1,703	1,046	1,114	1,308
67	R-T	Other services.....	67	19	324	442	1,583	971	1,027	1,025
68		All homogeneous branches.....	35,805	50,029	92,739	101,170	124,441	129,257	134,715	136,981
69		Private households.....	29,764	27,248	43,352	38,232	32,503	34,204	27,534	29,751
70		All homogeneous branches and private households (resident concept) 2.....	65,569	77,277	136,091	139,403	156,945	163,461	162,248	166,732
71		Transitional balance 3.....	38	-125	-207	-156	-209	-233	-217	-236
72		Total emissions (domestic concept) 2.....	65,607	77,152	135,884	139,246	156,735	163,228	162,031	166,496

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

3 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.3.3: Direct CH₄ process emissions
tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	1,371,251	1,282,206	1,272,686	1,263,499	1,267,591	1,288,752	1,298,856	1,291,258
2	01	Products of agriculture, hunting and related services.....	1,371,251	1,282,206	1,272,686	1,263,499	1,267,591	1,288,752	1,298,856	1,291,258
3	02	Products of forestry, logging and related services.....	0	0	0	0	0	0	0	0
4	03	Fish and other fishing products; aquaculture products.....	0	0	0	0	0	0	0	0
5	B	Mining and quarrying.....	670,104	308,228	137,166	129,894	165,229	143,638	112,098	123,318
6	05	Coal and lignite.....	662,890	303,297	135,040	127,844	162,559	141,239	110,110	121,913
7	06	Crude petroleum and natural gas.....	7,214	4,931	2,127	2,050	2,670	2,399	1,987	1,405
8	07-09	Metal ores, other mining and quarrying products.....	0	0	0	0	0	0	0	0
9	C	Manufactured products.....	35,104	33,829	30,971	30,663	29,635	29,517	30,380	30,498
10	10-12	Food products, beverages, tobacco products.....	226	64	49	54	50	51	48	43
11	13-15	Textiles, wearing apparel, leather and related products.....	26	3	5	7	5	5	6	6
12	16	Wood and products of wood and cork, except furniture.....	1,496	1,498	1,829	2,069	1,641	1,981	1,977	1,937
13	17	Paper and paper products.....	4	1	2	2	2	2	2	1
14	18	Printing and recording services.....	19	8	14	15	13	14	13	13
15	19	Coke and refined petroleum products.....	11,334	9,365	9,015	8,576	8,738	8,455	8,490	8,603
16	19.1	Coke oven products.....	0	0	0	0	0	0	0	0
17	19.2	Refined petroleum products.....	11,334	9,365	9,015	8,576	8,738	8,455	8,490	8,603
18	20	Chemicals and chemical products.....	21,456	22,460	19,576	19,434	18,730	18,543	19,355	19,414
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	0	0	0	0	0	0	0	0
20	22	Rubber and plastic products.....	39	34	53	57	40	43	56	50
21	23	Other non-metallic mineral products.....	0	0	0	0	1	2	1	2
22	23.1	Glass and glass products.....	0	0	0	0	0	0	0	0
23	23.2-9	Refractory products, cut, shaped and finished stone.....	0	0	0	0	1	2	1	2
24	24	Basic metals.....	362	315	286	297	285	286	286	284
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	295	286	257	264	253	255	253	253
26	24.4	Basic precious and other non-ferrous metals.....	2	2	3	4	3	3	5	5
27	24.5	Casting services of metal.....	64	27	25	30	29	28	28	26
28	25	Fabricated metal products, except machinery and equipment.....	61	32	59	64	53	58	59	57
29	26	Computer, electronic and optical products.....	35	17	10	10	9	10	10	9
30	27	Electrical equipment.....	10	6	8	8	7	7	7	7
31	28	Machinery and equipment n.e.c.....	31	15	23	22	19	20	20	19
32	29	Motor vehicles, trailers and semi-trailers.....	4	1	3	3	3	3	3	3
33	30	Other transport equipment.....	0	0	0	0	0	1	0	0
34	31-32	Furniture, other manufacture goods.....	0	10	39	43	37	35	39	35
35	33	Repair and installation services of machinery and equipment.....	0	0	0	0	2	2	9	14
36	D (35)	Electricity, gas, steam and air conditioning.....	106,041	72,041	49,887	48,146	47,442	47,118	46,230	46,850
37	35.1/.3	Electricity, transmission and distribution services, steam.....	0	2	1	2	11	14	14	14
38	35.2	Manufactured gas.....	106,041	72,039	49,886	48,144	47,431	47,104	46,217	46,836
39	E	Water supply; sewerage, waste management and remediation services.....	1,112,129	816,808	556,881	524,793	494,363	462,671	438,727	414,333
40	36	Natural water; water treatment and supply services.....	0	0	0	0	1	1	1	1
41	37-39	Sewerage services; waste collection and materials recovery services.....	1,112,129	816,808	556,881	524,793	494,362	462,670	438,727	414,333
42	37	Sewerage services, sewerage sludge.....	0	0	0	0	1	1	1	1
43	38-39	Waste collection, treatment and disposal services.....	1,112,129	816,807	556,881	524,792	494,361	462,669	438,725	414,331
44	F	Constructions and construction works.....	383	309	288	331	293	310	318	300
45	41-42	Building and building construction works.....	188	139	93	101	92	91	92	85
46	43	Specialised construction works.....	196	169	195	230	202	220	225	215
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	2,413	1,879	1,638	1,746	1,553	1,662	1,871	1,748
48	45	Wholesale and retail trade and repair services of motor vehicles.....	314	222	231	263	244	262	289	266
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	697	477	232	247	223	269	337	346
50	47	Retail trade services, except of motor vehicles and motorcycles.....	1,402	1,180	1,175	1,236	1,087	1,131	1,244	1,136
51	H	Transportation and storage services.....	99,056	105,931	112,816	115,373	116,964	119,027	119,109	119,026
52	49.1-2	Passenger rail transport services, freight rail transport services.....	11	8	7	7	7	4	12	15
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	98,803	105,788	112,599	115,138	116,762	118,794	118,825	118,732
54	50	Water transport services.....	0	0	0	0	0	0	0	0
55	51	Air transport services.....	0	0	0	0	2	3	3	3
56	52	Warehousing and support services for transportation.....	194	98	170	183	154	182	188	187
57	53	Postal and courier services.....	47	37	41	45	39	43	82	88
58	I	Accommodation and food services.....	801	635	487	555	498	494	488	439
59	J	Information and communication services.....	258	280	301	345	315	321	336	336
60	K	Financial and insurance services.....	349	310	339	351	322	354	361	341
61	L	Real estate services.....	65	69	68	73	65	62	56	59
62	M	Professional, scientific and technical services.....	409	393	453	494	442	519	552	563
63	N	Administrative and support services.....	129	112	139	161	133	140	214	226
64	O	Public administration and defence services.....	731	674	699	749	642	650	746	757
65	P	Education services.....	1,296	1,198	910	965	836	881	867	833
66	Q	Human health and social work services.....	1,567	1,320	1,352	1,465	1,338	1,354	1,662	1,682
67	R-T	Other services.....	931	868	536	477	427	450	603	577
68		All homogeneous branches.....	3,403,018	2,627,090	2,167,617	2,120,078	2,128,088	2,097,920	2,053,474	2,033,143
69		Private households.....	22,306	23,787	20,299	19,728	20,390	19,952	19,155	19,581
70		All homogeneous branches and private households.....	3,425,324	2,650,877	2,187,916	2,139,806	2,148,478	2,117,872	2,072,629	2,052,724

¹ Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

Table 4.3.4: Direct CH₄ emissions of road transport
tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	14	10	6	6	5	5	4	4
2	01	Products of agriculture, hunting and related services.....	13	9	5	5	5	4	4	3
3	02	Products of forestry, logging and related services.....	1	1	0	1	0	0	0	0
4	03	Fish and other fishing products; aquaculture products.....	0	0	0	0	0	0	0	0
5	B	Mining and quarrying.....	3	3	1	1	1	1	1	1
6	05	Coal and lignite.....	1	1	0	0	0	0	0	0
7	06	Crude petroleum and natural gas.....	1	1	0	0	0	0	0	0
8	07-09	Metal ores, other mining and quarrying products.....	2	1	1	1	1	1	0	0
9	C	Manufactured products.....	85	60	36	35	33	31	29	27
10	10-12	Food products, beverages, tobacco products.....	9	6	4	3	3	3	3	3
11	13-15	Textiles, wearing apparel, leather and related products.....	1	1	0	0	0	0	0	0
12	16	Wood and products of wood and cork, except furniture.....	1	1	1	0	0	0	0	0
13	17	Paper and paper products.....	2	1	1	1	1	1	1	1
14	18	Printing and recording services.....	1	1	0	0	0	0	0	0
15	19	Coke and refined petroleum products.....	3	2	1	1	1	1	1	1
16	19.1	Coke oven products.....	0	0	0	0	0	0	0	0
17	19.2	Refined petroleum products.....	3	2	1	1	1	1	1	1
18	20	Chemicals and chemical products.....	6	4	3	2	2	2	2	2
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	2	1	1	1	1	1	1	1
20	22	Rubber and plastic products.....	3	2	1	1	1	1	1	1
21	23	Other non-metallic mineral products.....	2	1	1	1	1	1	1	1
22	23.1	Glass and glass products.....	0	0	0	0	0	0	0	0
23	23.2-9	Refractory products, cut, shaped and finished stone.....	2	1	1	1	1	1	1	1
24	24	Basic metals.....	4	3	2	2	2	2	2	2
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	2	2	1	1	1	1	1	1
26	24.4	Basic precious and other non-ferrous metals.....	1	1	1	1	1	1	1	1
27	24.5	Casting services of metal.....	1	0	0	0	0	0	0	0
28	25	Fabricated metal products, except machinery and equipment.....	6	4	2	3	2	2	2	2
29	26	Computer, electronic and optical products.....	5	3	2	2	2	2	2	1
30	27	Electrical equipment.....	4	3	2	2	2	1	1	1
31	28	Machinery and equipment n.e.c.....	10	7	4	4	4	4	4	3
32	29	Motor vehicles, trailers and semi-trailers.....	17	12	7	7	7	6	6	5
33	30	Other transport equipment.....	3	2	1	1	1	1	1	1
34	31-32	Furniture, other manufacture goods.....	2	1	1	1	1	1	1	1
35	33	Repair and installation services of machinery and equipment.....	2	2	1	1	1	1	1	1
36	D (35)	Electricity, gas, steam and air conditioning.....	6	5	3	2	2	2	2	2
37	35.1/.3	Electricity, transmission and distribution services, steam.....	6	4	3	2	2	2	2	2
38	35.2	Manufactured gas.....	1	0	0	0	0	0	0	0
39	E	Water supply; sewerage, waste management and remediation services.....	98	73	37	32	27	25	21	19
40	36	Natural water; water treatment and supply services.....	2	1	1	1	1	0	0	0
41	37-39	Sewerage services; waste collection and materials recovery services.....	96	72	37	32	27	24	21	19
42	37	Sewerage services, sewerage sludge.....	10	7	4	3	3	3	3	2
43	38-39	Waste collection, treatment and disposal services.....	86	65	33	28	24	21	18	16
44	F	Constructions and construction works.....	63	46	27	26	25	23	21	20
45	41-42	Building and building construction works.....	20	14	8	8	8	8	7	6
46	43	Specialised construction works.....	43	32	19	18	17	16	15	13
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	162	113	68	62	58	54	52	47
48	45	Wholesale and retail trade and repair services of motor vehicles.....	24	17	10	7	6	6	6	6
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	73	53	32	29	27	25	23	20
50	47	Retail trade services, except of motor vehicles and motorcycles.....	66	43	27	26	25	24	23	21
51	H	Transportation and storage services.....	149	114	63	56	49	46	42	38
52	49.1-2	Passenger rail transport services, freight rail transport services.....	1	1	0	0	0	0	0	0
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	87	67	37	33	30	27	25	23
54	50	Water transport services.....	1	0	0	0	0	0	1	1
55	51	Air transport services.....	1	0	0	0	0	0	0	0
56	52	Warehousing and support services for transportation.....	42	32	18	16	14	14	8	7
57	53	Postal and courier services.....	18	14	8	6	5	5	8	7
58	I	Accommodation and food services.....	8	5	3	3	3	3	3	3
59	J	Information and communication services.....	36	26	14	15	13	12	11	10
60	K	Financial and insurance services.....	5	4	2	2	2	2	2	2
61	L	Real estate services.....	15	10	6	6	6	6	6	5
62	M	Professional, scientific and technical services.....	141	96	55	50	47	44	43	40
63	N	Administrative and support services.....	8	5	4	4	4	3	3	3
64	O	Public administration and defence services.....	68	47	27	24	22	21	19	18
65	P	Education services.....	3	2	1	1	1	1	1	1
66	Q	Human health and social work services.....	25	16	10	11	11	11	11	11
67	R-T	Other services.....	61	44	24	21	19	17	16	15
68		All homogeneous branches.....	951	678	388	357	329	308	288	266
69		Private households.....	18,315	11,603	7,185	6,987	6,516	6,248	6,162	6,029
70		All homogeneous branches and private households (residents concept).....	19,265	12,280	7,573	7,344	6,846	6,556	6,450	6,295
71		Transitional balance 2.....	-665	-1,104	-885	-871	-842	-710	-667	-782
72		Total emissions (domestic concept).....	18,600	11,176	6,688	6,473	6,004	5,846	5,784	5,513

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.4.1: Direct N₂O emissions

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	102,497	97,751	96,618	102,007	100,346	102,046	104,923	106,351
2	01	Products of agriculture, hunting and related services.....	102,486	97,739	96,605	101,994	100,335	102,034	104,910	106,338
3	02	Products of forestry, logging and related services.....	9	10	10	11	10	11	11	11
4	03	Fish and other fishing products; aquaculture products.....	2	2	2	2	2	2	2	2
5	B	Mining and quarrying.....	1,703	843	669	670	600	563	528	552
6	05	Coal and lignite.....	4	10	11	32	3	3	3	3
7	06	Crude petroleum and natural gas.....	15	27	10	6	5	6	6	7
8	07-09	Metal ores, other mining and quarrying products, mining support services...	1,684	805	648	633	592	554	518	542
9	C	Manufactured products.....	20,858	29,564	7,450	6,229	5,228	5,400	5,230	5,288
10	10-12	Food products, beverages, tobacco products.....	187	171	177	168	172	163	174	157
11	13-15	Textiles, wearing apparel, leather and related products.....	30	26	16	13	13	15	14	13
12	16	Wood and products of wood and cork, except furniture.....	25	85	131	173	98	114	168	156
13	17	Paper and paper products.....	183	225	206	182	164	167	166	155
14	18	Printing and recording services.....	11	11	10	9	10	10	10	11
15	19	Coke and refined petroleum products.....	330	319	274	282	280	273	267	261
16	19.1	Coke oven products.....	66	22	22	22	21	21	23	23
17	19.2	Refined petroleum products.....	264	297	252	261	259	251	244	238
18	20	Chemicals and chemical products.....	17,807	27,127	4,997	3,723	2,878	3,088	2,866	2,891
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	47	12	15	17	19	19	17	17
20	22	Rubber and plastic products.....	30	33	37	32	33	33	32	36
21	23	Other non-metallic mineral products.....	602	469	496	526	500	491	521	514
22	23.1	Glass and glass products.....	90	75	74	78	64	63	66	66
23	23.2-9	Refractory products, cut, shaped and finished stone.....	512	393	422	449	436	428	455	447
24	24	Basic metals.....	560	482	519	532	502	481	478	540
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	453	388	425	435	409	399	395	454
26	24.4	Basic precious and other non-ferrous metals.....	52	46	37	36	36	38	42	39
27	24.5	Casting services of metal.....	55	48	57	61	57	44	41	47
28	25	Fabricated metal products, except machinery and equipment.....	48	47	54	58	53	55	53	56
29	26	Computer, electronic and optical products.....	847	403	329	324	306	286	270	281
30	27	Electrical equipment.....	15	13	17	18	18	18	18	19
31	28	Machinery and equipment n.e.c.....	50	49	56	55	59	60	56	56
32	29	Motor vehicles, trailers and semi-trailers.....	59	61	71	72	77	79	73	77
33	30	Other transport equipment.....	12	11	14	13	15	16	15	15
34	31-32	Furniture, other manufacture goods.....	13	18	23	23	25	25	21	22
35	33	Repair and installation services of machinery and equipment.....	4	3	8	9	9	9	9	9
36	D (35)	Electricity, gas, steam and air conditioning.....	8,255	9,038	9,453	9,720	9,770	9,629	9,271	9,168
37	35.1/.3	Electricity, transmission and distribution services, steam.....	8,253	9,036	9,450	9,717	9,765	9,598	9,236	9,132
38	35.3	Manufactured gas; distribution services of gaseous fuels through mains.....	2	1	3	3	5	31	35	36
39	E	Water supply; sewerage, waste management and remediation services.....	2,732	3,074	3,067	3,193	3,232	3,221	3,302	3,333
40	36	Natural water; water treatment and supply services.....	3	3	6	6	6	6	6	7
41	37-39	Sewerage services; waste collection and materials recovery services.....	2,729	3,071	3,062	3,187	3,227	3,215	3,296	3,326
42	37	Sewerage services, sewerage sludge.....	16	14	20	20	21	22	22	23
43	38-39	Waste collection, treatment and disposal services.....	2,712	3,057	3,042	3,167	3,206	3,193	3,274	3,303
44	F	Constructions and construction works.....	307	237	279	308	312	329	343	364
45	41-42	Building and building construction works.....	128	98	108	118	121	127	132	140
46	43	Specialised construction works.....	180	139	171	190	191	202	210	223
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	341	310	484	509	518	536	540	556
48	45	Wholesale and retail trade and repair services of motor vehicles.....	48	37	56	37	37	38	39	40
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	158	170	316	357	373	386	391	405
50	47	Retail trade services, except of motor vehicles and motorcycles.....	136	103	112	115	108	112	110	112
51	H	Transportation and storage services.....	1,337	2,159	2,906	2,802	3,074	3,203	3,151	3,275
52	49.1-2	Passenger rail transport services, freight rail transport services.....	18	13	14	14	12	12	10	10
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	220	316	570	639	680	712	757	792
54	50	Water transport services.....	207	790	1,101	927	1,078	1,118	1,080	1,156
55	51	Air transport services.....	734	846	840	819	882	883	858	849
56	52	Warehousing and support services for transportation.....	110	135	270	296	312	345	230	241
57	53	Postal and courier services.....	48	58	111	106	110	133	216	226
58	I	Accommodation and food services.....	43	35	34	34	31	31	33	29
59	J	Information and communication services.....	66	63	89	113	115	119	118	123
60	K	Financial and insurance services.....	18	16	17	16	18	19	18	18
61	L	Real estate services.....	24	17	18	19	20	21	21	23
62	M	Professional, scientific and technical services.....	208	143	157	158	165	169	169	177
63	N	Administrative and support services.....	16	13	17	19	21	23	24	25
64	O	Public administration and defence services; compulsory social security services.....	145	104	130	143	107	106	111	115
65	P	Education services.....	38	33	35	34	35	34	30	30
66	Q	Human health and social work services.....	897	444	383	375	350	327	313	327
67	R-T	Other services.....	146	114	135	140	143	141	142	147
68		All homogeneous branches.....	139,632	143,956	121,942	126,489	124,085	125,918	128,268	129,901
69		Private households.....	5,831	3,648	3,680	3,660	3,453	3,553	3,342	3,463
70		All homogeneous branches and private households 2.....	145,463	147,603	125,622	130,149	127,538	129,471	131,610	133,364
71		Transitional balance 3.....	-618	-1,475	-1,802	-1,634	-1,873	-1,922	-1,832	-1,930
72		Total emissions (gross domestic emissions) 4.....	144,844	146,128	123,820	128,515	125,665	127,549	129,778	131,433
73		Emissions/Absorptions from LULUCF 5.....	2,689	2,512	2,714	2,757	2,805	2,823	2,843	2,868
74		Total emissions (net domestic emissions).....	147,533	148,640	126,533	131,272	128,470	130,372	132,621	134,302

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Residents concept, gross emissions.

3 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

4 Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

5 Absorptions/emissions from land use, land use changes and forestry.

Table 4.4.2: Direct N₂O emissions per unit energy consumption (not including road transport)

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	202	190	232	239	261	242	250	258
2	01	Products of agriculture, hunting and related services.....	193	180	222	229	252	233	240	247
3	02	Products of forestry, logging and related services.....	7	8	8	9	8	8	8	9
4	03	Fish and other fishing products; aquaculture products.....	2	2	2	2	2	1	2	1
5	B	Mining and quarrying.....	35	57	33	49	16	20	13	15
6	05	Coal and lignite.....	3	9	9	30	1	1	1	1
7	06	Crude petroleum and natural gas.....	13	25	7	3	2	2	3	3
8	07-09	Metal ores, other mining and quarrying products.....	20	23	17	16	13	17	9	12
9	C	Manufactured products.....	2,304	2,062	2,256	2,285	2,120	2,089	2,175	2,186
10	10-12	Food products, beverages, tobacco products.....	172	158	157	146	147	137	148	130
11	13-15	Textiles, wearing apparel, leather and related products.....	28	25	14	10	10	12	11	10
12	16	Wood and products of wood and cork, except furniture.....	23	83	128	170	94	111	165	153
13	17	Paper and paper products.....	180	222	201	177	159	161	161	150
14	18	Printing and recording services.....	9	10	7	7	7	8	7	8
15	19	Coke and refined petroleum products.....	325	314	268	274	270	262	256	250
16	19.1	Coke oven products.....	66	22	22	22	21	21	23	23
17	19.2	Refined petroleum products.....	259	293	245	253	249	241	234	227
18	20	Chemicals and chemical products.....	275	191	348	336	320	316	340	341
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	44	9	11	14	14	14	12	12
20	22	Rubber and plastic products.....	25	28	29	24	23	23	22	26
21	23	Other non-metallic mineral products.....	599	466	491	521	494	485	515	508
22	23.1	Glass and glass products.....	89	75	72	76	62	61	65	65
23	23.2-9	Refractory products, cut, shaped and finished stone.....	510	391	418	445	432	424	450	443
24	24	Basic metals.....	490	411	456	469	445	423	416	471
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	387	320	367	378	359	347	340	392
26	24.4	Basic precious and other non-ferrous metals.....	50	44	34	32	31	33	37	34
27	24.5	Casting services of metal.....	54	47	56	59	55	43	39	45
28	25	Fabricated metal products, except machinery and equipment.....	38	38	40	38	37	38	36	39
29	26	Computer, electronic and optical products.....	8	7	5	6	7	7	6	5
30	27	Electrical equipment.....	8	7	8	7	6	6	6	7
31	28	Machinery and equipment n.e.c.....	34	35	34	30	30	30	26	25
32	29	Motor vehicles, trailers and semi-trailers.....	30	36	30	29	28	29	24	27
33	30	Other transport equipment.....	6	6	6	5	5	6	5	5
34	31-32	Furniture, other manufacture goods.....	10	15	19	19	20	19	16	16
35	33	Repair and installation services of machinery and equipment.....	0	0	3	3	3	3	3	3
36	D (35)	Electricity, gas, steam and air conditioning.....	8,231	9,023	9,437	9,706	9,754	9,612	9,253	9,148
37	35.1/.3	Electricity, transmission and distribution services, steam.....	8,231	9,023	9,436	9,705	9,751	9,583	9,221	9,116
38	35.3	Manufactured gas.....	0	0	1	1	3	29	32	32
39	E	Water supply; sewerage, waste management and remediation services.....	24	105	111	122	112	125	114	114
40	36	Natural water; water treatment and supply services.....	0	0	0	0	0	0	0	0
41	37-39	Sewerage services; waste collection and materials recovery services.....	24	105	111	122	112	125	114	114
42	37	Sewerage services, sewerage sludge.....	0	0	0	0	0	0	0	0
43	38-39	Waste collection, treatment and disposal services.....	24	105	111	122	112	125	114	114
44	F	Constructions and construction works.....	155	126	130	137	128	133	137	143
45	41-42	Building and building construction works.....	77	63	63	66	62	64	66	69
46	43	Specialised construction works.....	78	64	67	71	67	70	71	74
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	111	81	78	76	58	61	60	58
48	45	Wholesale and retail trade and repair services of motor vehicles.....	18	9	11	10	9	10	9	9
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	25	15	12	15	9	10	11	11
50	47	Retail trade services, except of motor vehicles and motorcycles.....	69	57	55	52	40	41	40	38
51	H	Transportation and storage services.....	961	1,694	1,984	1,791	2,003	2,053	1,963	2,030
52	49.1-2	Passenger rail transport services, freight rail transport services.....	16	11	9	9	9	9	8	8
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	0	44	34	35	36	43	36	37
54	50	Water transport services.....	206	789	1,098	924	1,074	1,114	1,057	1,131
55	51	Air transport services.....	733	844	836	816	878	880	855	847
56	52	Warehousing and support services for transportation.....	5	4	5	5	5	6	5	5
57	53	Postal and courier services.....	2	2	1	1	1	1	2	2
58	I	Accommodation and food services.....	36	30	29	28	24	25	27	22
59	J	Information and communication services.....	11	11	9	9	9	9	8	8
60	K	Financial and insurance services.....	14	12	10	9	9	10	8	8
61	L	Real estate services.....	3	2	2	2	2	2	1	1
62	M	Professional, scientific and technical services.....	16	16	15	13	13	16	14	14
63	N	Administrative and support services.....	4	4	5	5	4	5	6	6
64	O	Public administration and defence services.....	93	64	75	85	44	41	42	42
65	P	Education services.....	35	31	31	29	30	29	25	24
66	Q	Human health and social work services.....	53	44	55	52	45	42	42	43
67	R-T	Other services.....	29	26	23	25	25	21	21	21
68		All homogeneous branches.....	12,316	13,580	14,516	14,661	14,658	14,534	14,157	14,142
69		Private households.....	1,274	1,132	1,448	1,364	1,092	1,125	937	985
70		All homogeneous branches and private households (resident concept) 2.....	13,590	14,712	15,964	16,026	15,750	15,659	15,095	15,127
71		Transitional balance 3.....	-514	-1,175	-1,439	-1,248	-1,492	-1,575	-1,493	-1,547
72		Total emissions (domestic concept) 2.....	13,076	13,537	14,525	14,777	14,258	14,084	13,601	13,580

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

3 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.4.3: Direct N₂O process emissions

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	102,276	97,544	96,361	101,740	100,055	101,772	104,640	106,059
2	01	Products of agriculture, hunting and related services.....	102,276	97,544	96,361	101,740	100,055	101,772	104,640	106,059
3	02	Products of forestry, logging and related services.....	0	0	0	0	0	0	0	0
4	03	Fish and other fishing products; aquaculture products.....	0	0	0	0	0	0	0	0
5	B	Mining and quarrying.....	1,662	780	627	612	573	532	503	524
6	05	Coal and lignite.....	0	0	0	0	0	0	0	0
7	06	Crude petroleum and natural gas.....	1	1	0	0	0	0	0	0
8	07-09	Metal ores, other mining and quarrying products.....	1,661	780	627	612	573	531	502	524
9	C	Manufactured products.....	18,415	27,382	5,000	3,729	2,871	3,065	2,807	2,849
10	10-12	Food products, beverages, tobacco products.....	0	0	0	0	0	0	0	0
11	13-15	Textiles, wearing apparel, leather and related products.....	0	0	0	0	0	0	0	0
12	16	Wood and products of wood and cork, except furniture.....	0	0	0	0	0	0	0	0
13	17	Paper and paper products.....	0	0	0	0	0	0	0	0
14	18	Printing and recording services.....	0	0	0	0	0	0	0	0
15	19	Coke and refined petroleum products.....	0	0	0	0	0	0	0	0
16	19.1	Coke oven products.....	0	0	0	0	0	0	0	0
17	19.2	Refined petroleum products.....	0	0	0	0	0	0	0	0
18	20	Chemicals and chemical products.....	17,521	26,927	4,634	3,372	2,541	2,755	2,508	2,532
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	0	0	0	0	0	0	0	0
20	22	Rubber and plastic products.....	0	0	0	0	0	0	0	0
21	23	Other non-metallic mineral products.....	0	0	0	0	0	0	0	0
22	23.1	Glass and glass products.....	0	0	0	0	0	0	0	0
23	23.2-9	Refractory products, cut, shaped and finished stone.....	0	0	0	0	0	0	0	0
24	24	Basic metals.....	62	65	53	51	43	44	48	55
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	62	65	53	51	43	44	48	55
26	24.4	Basic precious and other non-ferrous metals.....	0	0	0	0	0	0	0	0
27	24.5	Casting services of metal.....	0	0	0	0	0	0	0	0
28	25	Fabricated metal products, except machinery and equipment.....	0	0	0	0	0	0	0	0
29	26	Computer, electronic and optical products.....	831	390	313	306	287	266	251	262
30	27	Electrical equipment.....	0	0	0	0	0	0	0	0
31	28	Machinery and equipment n.e.c.....	0	0	0	0	0	0	0	0
32	29	Motor vehicles, trailers and semi-trailers.....	0	0	0	0	0	0	0	0
33	30	Other transport equipment.....	0	0	0	0	0	0	0	0
34	31-32	Furniture, other manufacture goods.....	0	0	0	0	0	0	0	0
35	33	Repair and installation services of machinery and equipment.....	0	0	0	0	0	0	0	0
36	D (35)	Electricity, gas, steam and air conditioning.....	0	0	0	0	0	0	0	0
37	35.1/.3	Electricity, transmission and distribution services, steam.....	0	0	0	0	0	0	0	0
38	35.3	Manufactured gas.....	0	0	0	0	0	0	0	0
39	E	Water supply; sewerage, waste management and remediation services.....	2,551	2,788	2,645	2,743	2,793	2,759	2,847	2,862
40	36	Natural water; water treatment and supply services.....	0	0	0	0	0	0	0	0
41	37-39	Sewerage services; waste collection and materials recovery services.....	2,551	2,788	2,645	2,743	2,793	2,759	2,847	2,862
42	37	Sewerage services, sewerage sludge.....	0	0	0	0	0	0	0	0
43	38-39	Waste collection, treatment and disposal services.....	2,551	2,788	2,645	2,743	2,793	2,759	2,847	2,862
44	F	Constructions and construction works.....	0	0	0	0	0	0	0	0
45	41-42	Building and building construction works.....	0	0	0	0	0	0	0	0
46	43	Specialised construction works.....	0	0	0	0	0	0	0	0
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	0	0	0	0	0	0	0	0
48	45	Wholesale and retail trade and repair services of motor vehicles.....	0	0	0	0	0	0	0	0
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	0	0	0	0	0	0	0	0
50	47	Retail trade services, except of motor vehicles and motorcycles.....	0	0	0	0	0	0	0	0
51	H	Transportation and storage services.....	0	0	0	0	0	0	0	0
52	49.1-2	Passenger rail transport services, freight rail transport services.....	0	0	0	0	0	0	0	0
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	0	0	0	0	0	0	0	0
54	50	Water transport services.....	0	0	0	0	0	0	0	0
55	51	Air transport services.....	0	0	0	0	0	0	0	0
56	52	Warehousing and support services for transportation.....	0	0	0	0	0	0	0	0
57	53	Postal and courier services.....	0	0	0	0	0	0	0	0
58	I	Accommodation and food services.....	0	0	0	0	0	0	0	0
59	J	Information and communication services.....	0	0	0	0	0	0	0	0
60	K	Financial and insurance services.....	0	0	0	0	0	0	0	0
61	L	Real estate services.....	0	0	0	0	0	0	0	0
62	M	Professional, scientific and technical services.....	0	0	0	0	0	0	0	0
63	N	Administrative and support services.....	0	0	0	0	0	0	0	0
64	O	Public administration and defence services.....	0	0	0	0	0	0	0	0
65	P	Education services.....	0	0	0	0	0	0	0	0
66	Q	Human health and social work services.....	831	390	313	306	287	266	251	262
67	R-T	Other services.....	0	0	0	0	0	0	0	0
68		All homogeneous branches.....	125,735	128,884	104,946	109,131	106,579	108,393	111,048	112,556
69		Private households.....	838	399	325	318	299	278	263	274
70		All homogeneous branches and private households.....	126,573	129,283	105,272	109,449	106,878	108,671	111,311	112,830

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

Table 4.4.4: Direct N₂O emissions of road transport
tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	20	16	25	28	30	32	34	34
2	01	Products of agriculture, hunting and related services.....	18	15	23	25	27	30	31	31
3	02	Products of forestry, logging and related services.....	2	1	2	3	3	3	3	3
4	03	Fish and other fishing products; aquaculture products.....	0	0	0	0	0	0	0	0
5	B	Mining and quarrying.....	6	5	9	9	11	11	12	12
6	05	Coal and lignite.....	2	2	3	2	2	2	2	2
7	06	Crude petroleum and natural gas.....	1	1	2	2	3	3	3	3
8	07-09	Metal ores, other mining and quarrying products.....	3	3	5	5	6	6	7	7
9	C	Manufactured products.....	139	121	194	214	237	246	247	253
10	10-12	Food products, beverages, tobacco products.....	15	13	20	21	25	26	26	27
11	13-15	Textiles, wearing apparel, leather and related products.....	2	2	3	3	3	3	3	3
12	16	Wood and products of wood and cork, except furniture.....	2	2	3	3	3	3	3	3
13	17	Paper and paper products.....	3	3	4	5	5	5	5	5
14	18	Printing and recording services.....	2	2	3	3	3	3	3	3
15	19	Coke and refined petroleum products.....	5	4	7	8	10	10	10	11
16	19.1	Coke oven products.....	0	0	0	0	0	0	0	0
17	19.2	Refined petroleum products.....	5	4	7	8	10	10	10	11
18	20	Chemicals and chemical products.....	10	9	14	15	17	17	18	18
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	3	2	4	4	5	5	5	5
20	22	Rubber and plastic products.....	6	5	8	8	9	10	10	10
21	23	Other non-metallic mineral products.....	3	3	5	5	6	6	6	6
22	23.1	Glass and glass products.....	1	1	1	1	1	1	1	1
23	23.2-9	Refractory products, cut, shaped and finished stone.....	3	2	4	4	4	5	5	5
24	24	Basic metals.....	7	6	10	12	14	14	14	14
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	4	3	6	7	7	7	7	7
26	24.4	Basic precious and other non-ferrous metals.....	2	2	3	4	5	5	5	5
27	24.5	Casting services of metal.....	1	1	1	2	2	2	2	2
28	25	Fabricated metal products, except machinery and equipment.....	10	8	13	20	16	17	17	18
29	26	Computer, electronic and optical products.....	8	7	11	12	13	13	13	14
30	27	Electrical equipment.....	7	6	10	11	12	12	12	12
31	28	Machinery and equipment n.e.c.....	16	14	22	25	29	30	30	31
32	29	Motor vehicles, trailers and semi-trailers.....	28	25	41	42	48	50	49	50
33	30	Other transport equipment.....	6	5	8	8	10	10	10	10
34	31-32	Furniture, other manufacture goods.....	3	3	4	4	5	5	5	5
35	33	Repair and installation services of machinery and equipment.....	4	3	5	5	6	6	6	6
36	D (35)	Electricity, gas, steam and air conditioning.....	24	14	16	14	16	17	18	19
37	35.1/.3	Electricity, transmission and distribution services, steam.....	22	13	14	13	14	15	15	16
38	35.3	Manufactured gas.....	2	1	1	2	2	2	3	3
39	E	Water supply; sewerage, waste management and remediation services.....	157	181	312	328	328	336	341	357
40	36	Natural water; water treatment and supply services.....	3	3	6	6	6	6	6	7
41	37-39	Sewerage services; waste collection and materials recovery services.....	153	177	306	322	322	330	335	351
42	37	Sewerage services, sewerage sludge.....	16	14	20	20	21	22	22	23
43	38-39	Waste collection, treatment and disposal services.....	137	164	286	302	301	309	313	327
44	F	Constructions and construction works.....	152	111	149	172	184	196	206	221
45	41-42	Building and building construction works.....	50	35	45	52	59	63	66	71
46	43	Specialised construction works.....	102	76	104	120	125	133	140	150
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	230	229	406	432	460	475	480	498
48	45	Wholesale and retail trade and repair services of motor vehicles.....	30	28	45	27	28	29	30	31
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	133	155	304	342	364	377	380	394
50	47	Retail trade services, except of motor vehicles and motorcycles.....	67	46	57	63	68	70	70	74
51	H	Transportation and storage services.....	376	464	922	1,011	1,071	1,150	1,188	1,245
52	49.1-2	Passenger rail transport services, freight rail transport services.....	2	2	4	5	3	3	2	2
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	220	272	536	603	644	668	721	755
54	50	Water transport services.....	1	2	3	3	3	4	23	25
55	51	Air transport services.....	1	2	3	3	4	4	2	3
56	52	Warehousing and support services for transportation.....	105	131	265	291	308	339	225	236
57	53	Postal and courier services.....	46	56	110	105	109	132	214	224
58	I	Accommodation and food services.....	7	4	5	6	6	7	7	7
59	J	Information and communication services.....	55	52	80	105	107	110	110	115
60	K	Financial and insurance services.....	4	4	7	8	9	9	9	10
61	L	Real estate services.....	21	14	16	17	18	19	20	22
62	M	Professional, scientific and technical services.....	192	127	142	145	151	154	156	163
63	N	Administrative and support services.....	13	9	12	15	17	18	18	19
64	O	Public administration and defence services.....	52	40	55	58	62	65	69	73
65	P	Education services.....	3	3	4	5	5	5	5	6
66	Q	Human health and social work services.....	13	10	14	16	19	19	20	21
67	R-T	Other services.....	117	87	112	115	118	120	121	127
68		All homogeneous branches.....	1,582	1,492	2,480	2,697	2,849	2,991	3,062	3,203
69		Private households.....	3,719	2,117	1,907	1,978	2,062	2,150	2,141	2,204
70		All homogeneous branches and private households (residents concept).....	5,300	3,608	4,386	4,675	4,910	5,141	5,203	5,407
71		Transitional balance 2.....	-105	-301	-364	-386	-381	-348	-338	-384
72		Total emissions (domestic concept).....	5,195	3,308	4,023	4,289	4,530	4,793	4,865	5,023

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.5: Direct domestic hydrofluorocarbon emissions (HFC)
CO₂ equivalent 1,000 tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	-	-	-	-	-	-	-	-
2	01	Products of agriculture, hunting and related services.....	-	-	-	-	-	-	-	-
3	02	Products of forestry, logging and related services.....	-	-	-	-	-	-	-	-
4	03	Fish and other fishing products; aquaculture products.....	-	-	-	-	-	-	-	-
5	B	Mining and quarrying.....	-	-	-	-	-	-	-	-
6	05	Coal and lignite.....	-	-	-	-	-	-	-	-
7	06	Crude petroleum and natural gas.....	-	-	-	-	-	-	-	-
8	07-09	Metal ores, other mining and quarrying products.....	-	-	-	-	-	-	-	-
9	C	Manufactured products.....	1,542	666	239	99	97	93	115	121
10	10-12	Food products, beverages, tobacco products.....	-	-	-	-	-	-	-	-
11	13-15	Textiles, wearing apparel, leather and related products.....	-	-	-	-	-	-	-	-
12	16	Wood and products of wood and cork, except furniture.....	-	-	-	-	-	-	-	-
13	17	Paper and paper products.....	-	-	-	-	-	-	-	-
14	18	Printing and recording services.....	-	-	-	-	-	-	-	-
15	19	Coke and refined petroleum products.....	-	-	-	-	-	-	-	-
16	19.1	Coke oven products.....	-	-	-	-	-	-	-	-
17	19.2	Refined petroleum products.....	-	-	-	-	-	-	-	-
18	20	Chemicals and chemical products.....	1,521	645	204	48	40	47	47	58
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	-	-	-	-	-	-	-	-
20	22	Rubber and plastic products.....	-	-	-	-	-	-	-	-
21	23	Other non-metallic mineral products.....	-	-	-	-	-	-	-	-
22	23.1	Glass and glass products.....	-	-	-	-	-	-	-	-
23	23.2-9	Refractory products, cut, shaped and finished stone.....	-	-	-	-	-	-	-	-
24	24	Basic metals.....	0	2	24	39	43	33	52	48
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	-	-	-	-	-	-	-	-
26	24.4	Basic precious and other non-ferrous metals.....	0	2	24	39	43	33	52	48
27	24.5	Casting services of metal.....	-	-	-	-	-	-	-	-
28	25	Fabricated metal products, except machinery and equipment.....	-	-	-	-	-	-	-	-
29	26	Computer, electronic and optical products.....	21	20	12	13	13	14	16	14
30	27	Electrical equipment.....	-	-	-	-	-	-	-	-
31	28	Machinery and equipment n.e.c.....	-	-	-	-	-	-	-	-
32	29	Motor vehicles, trailers and semi-trailers.....	-	-	-	-	-	-	-	-
33	30	Other transport equipment.....	-	-	-	-	-	-	-	-
34	31-32	Furniture, other manufacture goods.....	-	-	-	-	-	-	-	-
35	33	Repair and installation services of machinery and equipment.....	-	-	-	-	-	-	-	-
36	D (35)	Electricity, gas, steam and air conditioning.....	-	-	-	-	-	-	-	-
37	35.1/.3	Electricity, transmission and distribution services, steam.....	-	-	-	-	-	-	-	-
38	35.3	Manufactured gas.....	-	-	-	-	-	-	-	-
39	E	Water supply; sewerage, waste management and remediation services.....	6,265	9,274	10,514	10,854	11,044	11,003	11,068	11,235
40	36	Natural water; water treatment and supply services.....	-	-	-	-	-	-	-	-
41	37-39	Sewerage services; waste collection and materials recovery services.....	6,265	9,274	10,514	10,854	11,044	11,003	11,068	11,235
42	37	Sewerage services, sewerage sludge.....	-	-	-	-	-	-	-	-
43	38-39	Waste collection, treatment and disposal services.....	6,265	9,274	10,514	10,854	11,044	11,003	11,068	11,235
44	F	Constructions and construction works.....	-	-	-	-	-	-	-	-
45	41-42	Building and building construction works.....	-	-	-	-	-	-	-	-
46	43	Specialised construction works.....	-	-	-	-	-	-	-	-
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	-	-	-	-	-	-	-	-
48	45	Wholesale and retail trade and repair services of motor vehicles.....	-	-	-	-	-	-	-	-
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
50	47	Retail trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
51	H	Transportation and storage services.....	-	-	-	-	-	-	-	-
52	49.1-2	Passenger rail transport services, freight rail transport services.....	-	-	-	-	-	-	-	-
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	-	-	-	-	-	-	-	-
54	50	Water transport services.....	-	-	-	-	-	-	-	-
55	51	Air transport services.....	-	-	-	-	-	-	-	-
56	52	Warehousing and support services for transportation.....	-	-	-	-	-	-	-	-
57	53	Postal and courier services.....	-	-	-	-	-	-	-	-
58	I	Accommodation and food services.....	-	-	-	-	-	-	-	-
59	J	Information and communication services.....	-	-	-	-	-	-	-	-
60	K	Financial and insurance services.....	-	-	-	-	-	-	-	-
61	L	Real estate services.....	-	-	-	-	-	-	-	-
62	M	Professional, scientific and technical services.....	-	-	-	-	-	-	-	-
63	N	Administrative and support services.....	-	-	-	-	-	-	-	-
64	O	Public administration and defence services.....	-	-	-	-	-	-	-	-
65	P	Education services.....	-	-	-	-	-	-	-	-
66	Q	Human health and social work services.....	-	-	-	-	-	-	-	-
67	R-T	Other services.....	-	-	-	-	-	-	-	-
68		All homogeneous branches.....	7,806	9,940	10,753	10,953	11,140	11,096	11,183	11,356
69		Private households.....	-	-	-	-	-	-	-	-
70		All homogeneous branches and private households.....	7,806	9,940	10,753	10,953	11,140	11,096	11,183	11,357

¹ Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

Table 4.6: Direct domestic perfluorocarbon emissions (PFC)
CO₂ equivalent 1,000 tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	-	-	-	-	-	-	-	-
2	01	Products of agriculture, hunting and related services.....	-	-	-	-	-	-	-	-
3	02	Products of forestry, logging and related services.....	-	-	-	-	-	-	-	-
4	03	Fish and other fishing products; aquaculture products.....	-	-	-	-	-	-	-	-
5	B	Mining and quarrying.....	-	-	-	-	-	-	-	-
6	05	Coal and lignite.....	-	-	-	-	-	-	-	-
7	06	Crude petroleum and natural gas.....	-	-	-	-	-	-	-	-
8	07-09	Metal ores, other mining and quarrying products.....	-	-	-	-	-	-	-	-
9	C	Manufactured products.....	844	705	306	254	230	246	225	246
10	10-12	Food products, beverages, tobacco products.....	-	-	-	-	-	-	-	-
11	13-15	Textiles, wearing apparel, leather and related products.....	-	-	-	-	-	-	-	-
12	16	Wood and products of wood and cork, except furniture.....	-	-	-	-	-	-	-	-
13	17	Paper and paper products.....	-	-	-	-	-	-	-	-
14	18	Printing and recording services.....	-	-	-	-	-	-	-	-
15	19	Coke and refined petroleum products.....	-	-	-	-	-	-	-	-
16	19.1	Coke oven products.....	-	-	-	-	-	-	-	-
17	19.2	Refined petroleum products.....	-	-	-	-	-	-	-	-
18	20	Chemicals and chemical products.....	-	-	-	-	-	-	-	-
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	-	-	-	-	-	-	-	-
20	22	Rubber and plastic products.....	-	-	-	-	-	-	-	-
21	23	Other non-metallic mineral products.....	-	-	-	-	-	-	-	-
22	23.1	Glass and glass products.....	-	-	-	-	-	-	-	-
23	23.2-9	Refractory products, cut, shaped and finished stone.....	-	-	-	-	-	-	-	-
24	24	Basic metals.....	413	392	157	95	87	108	83	95
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	-	-	-	-	-	-	-	-
26	24.4	Basic precious and other non-ferrous metals.....	413	392	157	95	87	108	83	95
27	24.5	Casting services of metal.....	-	-	-	-	-	-	-	-
28	25	Fabricated metal products, except machinery and equipment.....	-	-	-	-	-	-	-	-
29	26	Computer, electronic and optical products.....	431	313	149	159	143	139	143	151
30	27	Electrical equipment.....	-	-	-	-	-	-	-	-
31	28	Machinery and equipment n.e.c.....	-	-	-	-	-	-	-	-
32	29	Motor vehicles, trailers and semi-trailers.....	-	-	-	-	-	-	-	-
33	30	Other transport equipment.....	-	-	-	-	-	-	-	-
34	31-32	Furniture, other manufacture goods.....	-	-	-	-	-	-	-	-
35	33	Repair and installation services of machinery and equipment.....	-	-	-	-	-	-	-	-
36	D (35)	Electricity, gas, steam and air conditioning.....	-	-	-	-	-	-	-	-
37	35.1/3	Electricity, transmission and distribution services, steam.....	-	-	-	-	-	-	-	-
38	35.3	Manufactured gas.....	-	-	-	-	-	-	-	-
39	E	Water supply; sewerage, waste management and remediation services.....	114	134	40	25	13	11	9	8
40	36	Natural water; water treatment and supply services.....	-	-	-	-	-	-	-	-
41	37-39	Sewerage services; waste collection and materials recovery services.....	114	134	40	25	13	11	9	8
42	37	Sewerage services, sewerage sludge.....	-	-	-	-	-	-	-	-
43	38-39	Waste collection, treatment and disposal services.....	114	134	40	25	13	11	9	8
44	F	Constructions and construction works.....	-	-	-	-	-	-	-	-
45	41-42	Building and building construction works.....	-	-	-	-	-	-	-	-
46	43	Specialised construction works.....	-	-	-	-	-	-	-	-
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	-	-	-	-	-	-	-	-
48	45	Wholesale and retail trade and repair services of motor vehicles.....	-	-	-	-	-	-	-	-
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
50	47	Retail trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
51	H	Transportation and storage services.....	-	-	-	-	-	-	-	-
52	49.1-2	Passenger rail transport services, freight rail transport services.....	-	-	-	-	-	-	-	-
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	-	-	-	-	-	-	-	-
54	50	Water transport services.....	-	-	-	-	-	-	-	-
55	51	Air transport services.....	-	-	-	-	-	-	-	-
56	52	Warehousing and support services for transportation.....	-	-	-	-	-	-	-	-
57	53	Postal and courier services.....	-	-	-	-	-	-	-	-
58	I	Accommodation and food services.....	-	-	-	-	-	-	-	-
59	J	Information and communication services.....	-	-	-	-	-	-	-	-
60	K	Financial and insurance services.....	-	-	-	-	-	-	-	-
61	L	Real estate services.....	-	-	-	-	-	-	-	-
62	M	Professional, scientific and technical services.....	-	-	-	-	-	-	-	-
63	N	Administrative and support services.....	-	-	-	-	-	-	-	-
64	O	Public administration and defence services.....	-	-	-	-	-	-	-	-
65	P	Education services.....	-	-	-	-	-	-	-	-
66	Q	Human health and social work services.....	-	-	-	-	-	-	-	-
67	R-T	Other services.....	-	-	-	-	-	-	-	-
68		All homogeneous branches.....	959	839	346	279	243	257	235	254
69		Private households.....	-	-	-	-	-	-	-	-
70		All homogeneous branches and private households.....	959	839	346	279	243	257	235	254

¹ Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

Table 4.7: Direct domestic sulphur hexafluoride (SF₆) emissions
CO₂ equivalent 1,000 tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	-	-	-	-	-	-	-	-
2	01	Products of agriculture, hunting and related services.....	-	-	-	-	-	-	-	-
3	02	Products of forestry, logging and related services.....	-	-	-	-	-	-	-	-
4	03	Fish and other fishing products; aquaculture products.....	-	-	-	-	-	-	-	-
5	B	Mining and quarrying.....	-	-	-	-	-	-	-	-
6	05	Coal and lignite.....	-	-	-	-	-	-	-	-
7	06	Crude petroleum and natural gas.....	-	-	-	-	-	-	-	-
8	07-09	Metal ores, other mining and quarrying products.....	-	-	-	-	-	-	-	-
9	C	Manufactured products.....	2,216	1,826	876	840	719	779	882	898
10	10-12	Food products, beverages, tobacco products.....	-	-	-	-	-	-	-	-
11	13-15	Textiles, wearing apparel, leather and related products.....	-	-	-	-	-	-	-	-
12	16	Wood and products of wood and cork, except furniture.....	-	-	-	-	-	-	-	-
13	17	Paper and paper products.....	-	-	-	-	-	-	-	-
14	18	Printing and recording services.....	-	-	-	-	-	-	-	-
15	19	Coke and refined petroleum products.....	-	-	-	-	-	-	-	-
16	19.1	Coke oven products.....	-	-	-	-	-	-	-	-
17	19.2	Refined petroleum products.....	-	-	-	-	-	-	-	-
18	20	Chemicals and chemical products.....	205	228	86	97	108	101	95	97
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	-	-	-	-	-	-	-	-
20	22	Rubber and plastic products.....	-	-	-	-	-	-	-	-
21	23	Other non-metallic mineral products.....	652	129	31	-	0	0	-	-
22	23.1	Glass and glass products.....	652	129	31	-	0	0	-	-
23	23.2-9	Refractory products, cut, shaped and finished stone.....	-	-	-	-	-	-	-	-
24	24	Basic metals.....	315	695	102	55	35	34	37	26
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	-	-	-	-	-	-	-	-
26	24.4	Basic precious and other non-ferrous metals.....	315	695	102	55	35	34	37	26
27	24.5	Casting services of metal.....	-	-	-	-	-	-	-	-
28	25	Fabricated metal products, except machinery and equipment.....	-	-	-	-	-	-	-	-
29	26	Computer, electronic and optical products.....	54	91	69	31	25	19	37	20
30	27	Electrical equipment.....	990	683	588	657	552	626	713	756
31	28	Machinery and equipment n.e.c.....	-	-	-	-	-	-	-	-
32	29	Motor vehicles, trailers and semi-trailers.....	-	-	-	-	-	-	-	-
33	30	Other transport equipment.....	-	-	-	-	-	-	-	-
34	31-32	Furniture, other manufacture goods.....	-	-	-	-	-	-	-	-
35	33	Repair and installation services of machinery and equipment.....	-	-	-	-	-	-	-	-
36	D (35)	Electricity, gas, steam and air conditioning.....	-	-	-	-	-	-	-	-
37	35.1/3	Electricity, transmission and distribution services, steam.....	-	-	-	-	-	-	-	-
38	35.3	Manufactured gas.....	-	-	-	-	-	-	-	-
39	E	Water supply; sewerage, waste management and remediation services.....	1,732	1,371	2,129	2,228	2,341	2,387	2,419	2,563
40	36	Natural water; water treatment and supply services.....	-	-	-	-	-	-	-	-
41	37-39	Sewerage services; waste collection and materials recovery services.....	1,732	1,371	2,129	2,228	2,341	2,387	2,419	2,563
42	37	Sewerage services, sewerage sludge.....	-	-	-	-	-	-	-	-
43	38-39	Waste collection, treatment and disposal services.....	1,732	1,371	2,129	2,228	2,341	2,387	2,419	2,563
44	F	Constructions and construction works.....	-	-	-	-	-	-	-	-
45	41-42	Building and building construction works.....	-	-	-	-	-	-	-	-
46	43	Specialised construction works.....	-	-	-	-	-	-	-	-
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	-	-	-	-	-	-	-	-
48	45	Wholesale and retail trade and repair services of motor vehicles.....	-	-	-	-	-	-	-	-
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
50	47	Retail trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
51	H	Transportation and storage services.....	-	-	-	-	-	-	-	-
52	49.1-2	Passenger rail transport services, freight rail transport services.....	-	-	-	-	-	-	-	-
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	-	-	-	-	-	-	-	-
54	50	Water transport services.....	-	-	-	-	-	-	-	-
55	51	Air transport services.....	-	-	-	-	-	-	-	-
56	52	Warehousing and support services for transportation.....	-	-	-	-	-	-	-	-
57	53	Postal and courier services.....	-	-	-	-	-	-	-	-
58	I	Accommodation and food services.....	-	-	-	-	-	-	-	-
59	J	Information and communication services.....	-	-	-	-	-	-	-	-
60	K	Financial and insurance services.....	-	-	-	-	-	-	-	-
61	L	Real estate services.....	-	-	-	-	-	-	-	-
62	M	Professional, scientific and technical services.....	125	123	95	95	95	95	95	100
63	N	Administrative and support services.....	-	-	-	-	-	-	-	-
64	O	Public administration and defence services.....	-	-	-	-	-	-	-	-
65	P	Education services.....	-	-	-	-	-	-	-	-
66	Q	Human health and social work services.....	-	-	-	-	-	-	-	-
67	R-T	Other services.....	-	-	-	-	-	-	-	-
68		All homogeneous branches.....	4,072	3,320	3,100	3,163	3,155	3,261	3,396	3,562
69		Private households.....	-	-	-	-	-	-	-	-
70		All homogeneous branches and private households.....	4,072	3,320	3,100	3,163	3,155	3,261	3,396	3,562

¹ Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

Table 4.8: Direct domestic Nitrogen trifluoride (NF₃) emissionsCO₂ equivalent 1,000 tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	-	-	-	-	-	-	-	-
2	01	Products of agriculture, hunting and related services.....	-	-	-	-	-	-	-	-
3	02	Products of forestry, logging and related services.....	-	-	-	-	-	-	-	-
4	03	Fish and other fishing products; aquaculture products.....	-	-	-	-	-	-	-	-
5	B	Mining and quarrying.....	-	-	-	-	-	-	-	-
6	05	Coal and lignite.....	-	-	-	-	-	-	-	-
7	06	Crude petroleum and natural gas.....	-	-	-	-	-	-	-	-
8	07-09	Metal ores, other mining and quarrying products.....	-	-	-	-	-	-	-	-
9	C	Manufactured products.....	9	34	61	61	35	16	20	12
10	10-12	Food products, beverages, tobacco products.....	-	-	-	-	-	-	-	-
11	13-15	Textiles, wearing apparel, leather and related products.....	-	-	-	-	-	-	-	-
12	16	Wood and products of wood and cork, except furniture.....	-	-	-	-	-	-	-	-
13	17	Paper and paper products.....	-	-	-	-	-	-	-	-
14	18	Printing and recording services.....	-	-	-	-	-	-	-	-
15	19	Coke and refined petroleum products.....	-	-	-	-	-	-	-	-
16	19.1	Coke oven products.....	-	-	-	-	-	-	-	-
17	19.2	Refined petroleum products.....	-	-	-	-	-	-	-	-
18	20	Chemicals and chemical products.....	-	-	-	-	-	-	-	-
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	-	-	-	-	-	-	-	-
20	22	Rubber and plastic products.....	-	-	-	-	-	-	-	-
21	23	Other non-metallic mineral products.....	-	-	-	-	-	-	-	-
22	23.1	Glass and glass products.....	-	-	-	-	-	-	-	-
23	23.2-9	Refractory products, cut, shaped and finished stone.....	-	-	-	-	-	-	-	-
24	24	Basic metals.....	-	-	-	-	-	-	-	-
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	-	-	-	-	-	-	-	-
26	24.4	Basic precious and other non-ferrous metals.....	-	-	-	-	-	-	-	-
27	24.5	Casting services of metal.....	-	-	-	-	-	-	-	-
28	25	Fabricated metal products, except machinery and equipment.....	-	-	-	-	-	-	-	-
29	26	Computer, electronic and optical products.....	9	34	61	61	35	16	20	12
30	27	Electrical equipment.....	-	-	-	-	-	-	-	-
31	28	Machinery and equipment n.e.c.....	-	-	-	-	-	-	-	-
32	29	Motor vehicles, trailers and semi-trailers.....	-	-	-	-	-	-	-	-
33	30	Other transport equipment.....	-	-	-	-	-	-	-	-
34	31-32	Furniture, other manufacture goods.....	-	-	-	-	-	-	-	-
35	33	Repair and installation services of machinery and equipment.....	-	-	-	-	-	-	-	-
36	D (35)	Electricity, gas, steam and air conditioning.....	-	-	-	-	-	-	-	-
37	35.1/3	Electricity, transmission and distribution services, steam.....	-	-	-	-	-	-	-	-
38	35.3	Manufactured gas.....	-	-	-	-	-	-	-	-
39	E	Water supply; sewerage, waste management and remediation services.....	-	-	-	-	-	-	-	-
40	36	Natural water; water treatment and supply services.....	-	-	-	-	-	-	-	-
41	37-39	Sewerage services; waste collection and materials recovery services.....	-	-	-	-	-	-	-	-
42	37	Sewerage services, sewerage sludge.....	-	-	-	-	-	-	-	-
43	38-39	Waste collection, treatment and disposal services.....	-	-	-	-	-	-	-	-
44	F	Constructions and construction works.....	-	-	-	-	-	-	-	-
45	41-42	Building and building construction works.....	-	-	-	-	-	-	-	-
46	43	Specialised construction works.....	-	-	-	-	-	-	-	-
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	-	-	-	-	-	-	-	-
48	45	Wholesale and retail trade and repair services of motor vehicles.....	-	-	-	-	-	-	-	-
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
50	47	Retail trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
51	H	Transportation and storage services.....	-	-	-	-	-	-	-	-
52	49.1-2	Passenger rail transport services, freight rail transport services.....	-	-	-	-	-	-	-	-
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	-	-	-	-	-	-	-	-
54	50	Water transport services.....	-	-	-	-	-	-	-	-
55	51	Air transport services.....	-	-	-	-	-	-	-	-
56	52	Warehousing and support services for transportation.....	-	-	-	-	-	-	-	-
57	53	Postal and courier services.....	-	-	-	-	-	-	-	-
58	I	Accommodation and food services.....	-	-	-	-	-	-	-	-
59	J	Information and communication services.....	-	-	-	-	-	-	-	-
60	K	Financial and insurance services.....	-	-	-	-	-	-	-	-
61	L	Real estate services.....	-	-	-	-	-	-	-	-
62	M	Professional, scientific and technical services.....	-	-	-	-	-	-	-	-
63	N	Administrative and support services.....	-	-	-	-	-	-	-	-
64	O	Public administration and defence services.....	-	-	-	-	-	-	-	-
65	P	Education services.....	-	-	-	-	-	-	-	-
66	Q	Human health and social work services.....	-	-	-	-	-	-	-	-
67	R-T	Other services.....	-	-	-	-	-	-	-	-
68		All homogeneous branches.....	9	34	61	61	35	16	20	12
69		Private households.....	-	-	-	-	-	-	-	-
70		All homogeneous branches and private households.....	9	34	61	61	35	16	20	12

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

Table 4.9.1: Direct NH₃ emissions

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	644,141	632,174	642,632	684,520	667,222	692,570	701,147	724,023
2	01	Products of agriculture, hunting and related services.....	644,139	632,173	642,631	684,519	667,221	692,569	701,146	724,022
3	02	Products of forestry, logging and related services.....	2	2	1	1	1	1	1	1
4	03	Fish and other fishing products; aquaculture products.....	0	0	0	0	0	0	0	0
5	B	Mining and quarrying.....	23	25	15	15	10	10	9	12
6	05	Coal and lignite.....	6	5	4	7	3	3	3	3
7	06	Crude petroleum and natural gas.....	4	7	2	1	1	1	1	1
8	07-09	Metal ores, other mining and quarrying products.....	13	13	9	7	6	6	5	7
9	C	Manufactured products.....	14,186	13,586	12,743	13,038	12,847	12,707	12,620	12,450
10	10-12	Food products, beverages, tobacco products.....	147	113	90	76	72	65	66	63
11	13-15	Textiles, wearing apparel, leather and related products.....	19	18	5	6	6	6	5	5
12	16	Wood and products of wood and cork, except furniture.....	27	30	44	51	31	34	47	44
13	17	Paper and paper products.....	45	40	60	36	32	36	31	39
14	18	Printing and recording services.....	8	8	6	5	5	5	4	4
15	19	Coke and refined petroleum products.....	687	751	594	581	561	557	499	516
16	19.1	Coke oven products.....	35	21	16	15	15	16	17	17
17	19.2	Refined petroleum products.....	652	730	578	566	546	541	482	499
18	20	Chemicals and chemical products.....	9,635	9,324	9,279	9,438	9,332	9,284	9,289	9,222
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	52	7	6	10	10	9	5	6
20	22	Rubber and plastic products.....	25	26	33	20	20	19	16	18
21	23	Other non-metallic mineral products.....	3,121	2,909	2,278	2,495	2,473	2,392	2,368	2,237
22	23.1	Glass and glass products.....	1,259	1,185	599	689	687	699	720	711
23	23.2-9	Refractory products, cut, shaped and finished stone.....	1,862	1,725	1,679	1,806	1,786	1,693	1,647	1,526
24	24	Basic metals.....	190	167	166	155	146	146	151	151
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	73	61	71	49	45	48	53	53
26	24.4	Basic precious and other non-ferrous metals.....	22	17	15	12	12	12	12	12
27	24.5	Casting services of metal.....	95	89	80	94	88	86	85	85
28	25	Fabricated metal products, except machinery and equipment.....	53	44	43	40	36	36	31	40
29	26	Computer, electronic and optical products.....	21	15	11	10	10	10	9	9
30	27	Electrical equipment.....	18	15	14	11	11	10	10	10
31	28	Machinery and equipment n.e.c.....	58	47	47	43	42	39	35	32
32	29	Motor vehicles, trailers and semi-trailers.....	48	40	33	32	33	32	29	31
33	30	Other transport equipment.....	10	8	10	6	6	6	6	6
34	31-32	Furniture, other manufacture goods.....	16	17	17	16	16	16	13	13
35	33	Repair and installation services of machinery and equipment.....	4	4	5	6	5	5	6	6
36	D (35)	Electricity, gas, steam and air conditioning.....	4,084	4,075	4,117	4,247	4,211	4,232	4,178	4,154
37	35.1/.3	Electricity, transmission and distribution services, steam.....	4,083	4,074	4,116	4,246	4,210	4,227	4,172	4,148
38	35.2	Manufactured gas.....	1	1	1	1	1	5	6	6
39	E	Water supply; sewerage, waste management and remediation services.....	2,430	3,018	3,189	3,496	3,701	3,617	3,840	3,839
40	36	Natural water; water treatment and supply services.....	1	1	1	1	1	1	1	1
41	37-39	Sewerage services; waste collection and materials recovery services.....	2,428	3,017	3,188	3,495	3,700	3,616	3,839	3,838
42	37	Sewerage services, sewerage sludge.....	15	12	9	9	8	8	7	7
43	38-39	Waste collection, treatment and disposal services.....	2,413	3,005	3,178	3,486	3,692	3,608	3,832	3,831
44	F	Constructions and construction works.....	150	136	112	109	112	114	104	103
45	41-42	Building and building construction works.....	63	57	41	38	39	39	35	35
46	43	Specialised construction works.....	87	79	72	71	73	75	68	68
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	520	431	364	339	337	335	328	324
48	45	Wholesale and retail trade and repair services of motor vehicles.....	88	60	53	46	46	46	45	44
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	136	119	94	92	92	93	95	96
50	47	Retail trade services, except of motor vehicles and motorcycles.....	296	253	216	201	200	196	188	184
51	H	Transportation and storage services.....	1,382	1,660	1,684	1,635	1,759	1,780	1,737	1,733
52	49.1-2	Passenger rail transport services, freight rail transport services.....	18	12	10	11	10	10	9	9
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	49	56	56	57	57	58	64	65
54	50	Water transport services.....	23	81	110	94	108	112	108	116
55	51	Air transport services.....	1,241	1,456	1,455	1,425	1,537	1,547	1,505	1,490
56	52	Warehousing and support services for transportation.....	35	39	38	37	37	42	31	32
57	53	Postal and courier services.....	15	16	14	11	11	13	21	22
58	I	Accommodation and food services.....	98	101	91	82	84	86	73	70
59	J	Information and communication services.....	81	78	54	55	55	55	49	49
60	K	Financial and insurance services.....	51	48	31	26	28	30	26	25
61	L	Real estate services.....	42	35	26	25	25	25	24	24
62	M	Professional, scientific and technical services.....	349	300	220	203	197	191	184	182
63	N	Administrative and support services.....	27	26	25	24	23	24	25	27
64	O	Public administration and defence services.....	218	193	129	106	101	108	106	104
65	P	Education services.....	66	67	61	53	53	55	46	45
66	Q	Human health and social work services.....	130	125	117	102	106	109	101	103
67	R-T	Other services.....	151	137	102	92	89	89	81	81
68		All homogeneous branches.....	668,127	656,216	665,712	708,166	690,962	716,135	724,678	747,347
69		Private households.....	31,775	25,416	19,115	18,378	17,130	16,414	15,557	14,994
70		All homogeneous branches and private households (residents concept) 2.....	699,902	681,632	684,827	726,544	708,092	732,549	740,235	762,342
71		Transitional balance 3.....	-2,206	-3,473	-3,364	-3,268	-3,301	-3,004	-2,839	-3,048
72		Total emissions (domestic concept) 2.....	697,696	678,159	681,463	723,276	704,791	729,545	737,396	759,294

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

3 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.9.2: Direct NH₃ emissions per unit energy consumption (not including road transport)

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	95	78	78	69	76	74	66	65
2	01	Products of agriculture, hunting and related services.....	94	77	77	69	75	73	65	65
3	02	Products of forestry, logging and related services.....	1	1	1	1	0	0	1	1
4	03	Fish and other fishing products; aquaculture products.....	0	0	0	0	0	0	0	0
5	B	Mining and quarrying.....	18	20	11	12	6	6	5	8
6	05	Coal and lignite.....	3	3	2	4	0	1	0	1
7	06	Crude petroleum and natural gas.....	3	6	2	1	1	1	1	1
8	07-09	Metal ores, other mining and quarrying products.....	12	11	8	6	5	5	4	7
9	C	Manufactured products.....	1,353	1,270	1,204	1,206	1,108	1,081	1,010	1,021
10	10-12	Food products, beverages, tobacco products.....	130	98	78	64	61	54	54	51
11	13-15	Textiles, wearing apparel, leather and related products.....	17	17	4	4	5	5	4	4
12	16	Wood and products of wood and cork, except furniture.....	25	28	43	49	30	33	45	43
13	17	Paper and paper products.....	41	37	57	34	29	34	29	37
14	18	Printing and recording services.....	6	6	4	4	3	4	3	3
15	19	Coke and refined petroleum products.....	682	747	590	577	557	552	494	512
16	19.1	Coke oven products.....	35	21	16	15	15	16	17	17
17	19.2	Refined petroleum products.....	647	726	574	562	542	536	477	495
18	20	Chemicals and chemical products.....	106	86	132	227	191	164	165	145
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	49	5	4	8	8	7	3	4
20	22	Rubber and plastic products.....	19	21	29	16	16	15	12	13
21	23	Other non-metallic mineral products.....	78	64	89	93	85	89	86	89
22	23.1	Glass and glass products.....	12	8	7	9	6	5	5	7
23	23.2-9	Refractory products, cut, shaped and finished stone.....	66	55	82	84	79	84	81	82
24	24	Basic metals.....	65	49	58	32	29	33	36	38
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	42	31	43	20	16	20	25	25
26	24.4	Basic precious and other non-ferrous metals.....	19	15	13	10	10	10	10	10
27	24.5	Casting services of metal.....	4	3	2	2	2	3	1	2
28	25	Fabricated metal products, except machinery and equipment.....	42	35	36	30	28	29	23	33
29	26	Computer, electronic and optical products.....	12	8	5	4	5	5	3	3
30	27	Electrical equipment.....	10	8	8	5	6	5	5	5
31	28	Machinery and equipment n.e.c.....	39	32	34	30	29	26	22	18
32	29	Motor vehicles, trailers and semi-trailers.....	17	14	11	10	10	10	8	9
33	30	Other transport equipment.....	4	3	5	2	2	2	2	2
34	31-32	Furniture, other manufacture goods.....	12	14	15	14	13	13	11	11
35	33	Repair and installation services of machinery and equipment.....	0	0	3	3	2	2	3	3
36	D (35)	Electricity, gas, steam and air conditioning.....	2,340	2,333	2,376	2,507	2,472	2,493	2,439	2,414
37	35.1/.3	Electricity, transmission and distribution services, steam.....	2,340	2,333	2,376	2,507	2,472	2,489	2,434	2,409
38	35.2	Manufactured gas.....	0	0	0	0	1	4	5	5
39	E	Water supply; sewerage, waste management and remediation services.....	5	8	13	16	7	17	13	12
40	36	Natural water; water treatment and supply services.....	0	0	0	0	0	0	0	0
41	37-39	Sewerage services; waste collection and materials recovery services.....	5	8	13	16	7	17	13	12
42	37	Sewerage services, sewerage sludge.....	5	0	0	0	0	0	0	0
43	38-39	Waste collection, treatment and disposal services.....	0	8	13	16	7	17	13	12
44	F	Constructions and construction works.....	82	77	61	55	58	62	51	51
45	41-42	Building and building construction works.....	40	38	24	21	21	22	19	18
46	43	Specialised construction works.....	42	40	36	35	37	39	33	32
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	220	181	159	140	148	153	145	143
48	45	Wholesale and retail trade and repair services of motor vehicles.....	46	25	24	21	23	24	23	22
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	43	36	21	18	20	24	25	26
50	47	Retail trade services, except of motor vehicles and motorcycles.....	131	120	114	101	105	106	97	95
51	H	Transportation and storage services.....	1,298	1,572	1,593	1,545	1,671	1,689	1,642	1,636
52	49.1-2	Passenger rail transport services, freight rail transport services.....	18	12	10	10	10	9	9	9
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	0	4	3	3	4	5	6	6
54	50	Water transport services.....	23	80	110	93	107	111	106	114
55	51	Air transport services.....	1,241	1,456	1,455	1,425	1,536	1,546	1,505	1,490
56	52	Warehousing and support services for transportation.....	12	15	12	11	12	15	12	13
57	53	Postal and courier services.....	5	5	3	2	2	2	4	4
58	I	Accommodation and food services.....	77	84	78	69	71	74	61	58
59	J	Information and communication services.....	29	35	21	17	18	20	15	15
60	K	Financial and insurance services.....	37	36	22	17	18	21	16	16
61	L	Real estate services.....	8	7	4	3	4	4	3	3
62	M	Professional, scientific and technical services.....	40	50	37	29	31	34	29	29
63	N	Administrative and support services.....	8	11	12	11	10	11	12	14
64	O	Public administration and defence services.....	163	148	94	73	70	78	77	76
65	P	Education services.....	61	63	58	50	50	52	43	42
66	Q	Human health and social work services.....	71	77	79	62	65	70	60	59
67	R-T	Other services.....	64	64	46	39	40	41	34	35
68		All homogeneous branches.....	5,968	6,115	5,946	5,920	5,925	5,980	5,722	5,697
69		Private households.....	2,116	1,894	1,682	1,426	1,522	1,659	1,383	1,378
70		All homogeneous branches and private households (residents concept) 2.....	8,084	8,009	7,628	7,346	7,447	7,639	7,105	7,075
71		Transitional balance 3.....	-1,079	-1,342	-1,355	-1,302	-1,435	-1,459	-1,410	-1,402
72		Total emissions (domestic concept) 2.....	7,005	6,666	6,273	6,044	6,011	6,180	5,694	5,673

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

3 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.9.3: Direct NH₃ process emissions

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	644,032	632,085	642,544	684,441	667,137	692,487	701,072	723,950
2	01	Products of agriculture, hunting and related services.....	644,032	632,085	642,544	684,441	667,137	692,487	701,072	723,950
3	02	Products of forestry, logging and related services.....	0	0	0	0	0	0	0	0
4	03	Fish and other fishing products; aquaculture products.....	0	0	0	0	0	0	0	0
5	B	Mining and quarrying.....	2	2	2	2	2	2	2	2
6	05	Coal and lignite.....	2	2	2	2	2	2	2	2
7	06	Crude petroleum and natural gas.....	0	0	0	0	0	0	0	0
8	07-09	Metal ores, other mining and quarrying products.....	0	0	0	0	0	0	0	0
9	C	Manufactured products.....	12,673	12,182	11,428	11,719	11,628	11,520	11,503	11,321
10	10-12	Food products, beverages, tobacco products.....	0	0	0	0	0	0	0	0
11	13-15	Textiles, wearing apparel, leather and related products.....	0	0	0	0	0	0	0	0
12	16	Wood and products of wood and cork, except furniture.....	0	0	0	0	0	0	0	0
13	17	Paper and paper products.....	0	0	0	0	0	0	0	0
14	18	Printing and recording services.....	0	0	0	0	0	0	0	0
15	19	Coke and refined petroleum products.....	0	0	0	0	0	0	0	0
16	19.1	Coke oven products.....	0	0	0	0	0	0	0	0
17	19.2	Refined petroleum products.....	0	0	0	0	0	0	0	0
18	20	Chemicals and chemical products.....	9,517	9,228	9,139	9,203	9,133	9,112	9,116	9,069
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	0	0	0	0	0	0	0	0
20	22	Rubber and plastic products.....	0	0	0	0	0	0	0	0
21	23	Other non-metallic mineral products.....	3,039	2,843	2,187	2,399	2,385	2,301	2,279	2,145
22	23.1	Glass and glass products.....	1,247	1,176	591	679	680	694	714	704
23	23.2-9	Refractory products, cut, shaped and finished stone.....	1,792	1,667	1,595	1,720	1,705	1,607	1,564	1,441
24	24	Basic metals.....	117	111	103	117	110	108	108	107
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	27	26	25	26	25	25	25	25
26	24.4	Basic precious and other non-ferrous metals.....	0	0	0	0	0	0	0	0
27	24.5	Casting services of metal.....	90	85	77	91	85	82	83	82
28	25	Fabricated metal products, except machinery and equipment.....	0	0	0	0	0	0	0	0
29	26	Computer, electronic and optical products.....	0	0	0	0	0	0	0	0
30	27	Electrical equipment.....	0	0	0	0	0	0	0	0
31	28	Machinery and equipment n.e.c.....	0	0	0	0	0	0	0	0
32	29	Motor vehicles, trailers and semi-trailers.....	0	0	0	0	0	0	0	0
33	30	Other transport equipment.....	0	0	0	0	0	0	0	0
34	31-32	Furniture, other manufacture goods.....	0	0	0	0	0	0	0	0
35	33	Repair and installation services of machinery and equipment.....	0	0	0	0	0	0	0	0
36	D (35)	Electricity, gas, steam and air conditioning.....	1,733	1,733	1,733	1,733	1,733	1,733	1,733	1,733
37	35.1/.3	Electricity, transmission and distribution services, steam.....	1,733	1,733	1,733	1,733	1,733	1,733	1,733	1,733
38	35.2	Manufactured gas.....	0	0	0	0	0	0	0	0
39	E	Water supply; sewerage, waste management and remediation services.....	2,348	2,939	3,116	3,423	3,642	3,549	3,778	3,778
40	36	Natural water; water treatment and supply services.....	0	0	0	0	0	0	0	0
41	37-39	Sewerage services; waste collection and materials recovery services.....	2,348	2,939	3,116	3,423	3,642	3,549	3,778	3,778
42	37	Sewerage services, sewerage sludge.....	0	0	0	0	0	0	0	0
43	38-39	Waste collection, treatment and disposal services.....	2,348	2,939	3,116	3,423	3,642	3,549	3,778	3,778
44	F	Constructions and construction works.....	0	0	0	0	0	0	0	0
45	41-42	Building and building construction works.....	0	0	0	0	0	0	0	0
46	43	Specialised construction works.....	0	0	0	0	0	0	0	0
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	0	0	0	0	0	0	0	0
48	45	Wholesale and retail trade and repair services of motor vehicles.....	0	0	0	0	0	0	0	0
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	0	0	0	0	0	0	0	0
50	47	Retail trade services, except of motor vehicles and motorcycles.....	0	0	0	0	0	0	0	0
51	H	Transportation and storage services.....	0	0	0	0	0	0	0	0
52	49.1-2	Passenger rail transport services, freight rail transport services.....	0	0	0	0	0	0	0	0
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	0	0	0	0	0	0	0	0
54	50	Water transport services.....	0	0	0	0	0	0	0	0
55	51	Air transport services.....	0	0	0	0	0	0	0	0
56	52	Warehousing and support services for transportation.....	0	0	0	0	0	0	0	0
57	53	Postal and courier services.....	0	0	0	0	0	0	0	0
58	I	Accommodation and food services.....	0	0	0	0	0	0	0	0
59	J	Information and communication services.....	0	0	0	0	0	0	0	0
60	K	Financial and insurance services.....	0	0	0	0	0	0	0	0
61	L	Real estate services.....	0	0	0	0	0	0	0	0
62	M	Professional, scientific and technical services.....	0	0	0	0	0	0	0	0
63	N	Administrative and support services.....	0	0	0	0	0	0	0	0
64	O	Public administration and defence services.....	0	0	0	0	0	0	0	0
65	P	Education services.....	0	0	0	0	0	0	0	0
66	Q	Human health and social work services.....	0	0	0	0	0	0	0	0
67	R-T	Other services.....	0	0	0	0	0	0	0	0
68		All homogeneous branches.....	660,788	648,940	658,823	701,318	684,143	709,291	718,088	740,783
69		Private households.....	1,395	1,146	1,083	1,125	1,137	1,123	986	996
70		All homogeneous branches and private households.....	662,184	650,086	659,906	702,443	685,280	710,414	719,074	741,779

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

Table 4.9.4: Direct NH₃ emissions of road transport
tonnes

No.	CPA ¹⁾	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	14	12	10	10	9	9	9	8
2	01	Products of agriculture, hunting and related services.....	13	11	9	9	9	9	8	8
3	02	Products of forestry, logging and related services.....	1	1	1	1	1	1	1	1
4	03	Fish and other fishing products; aquaculture products.....	0	0	0	0	0	0	0	0
5	B	Mining and quarrying.....	3	2	2	2	2	2	2	2
6	05	Coal and lignite.....	1	1	1	0	0	0	0	0
7	06	Crude petroleum and natural gas.....	1	1	0	0	0	0	0	0
8	07-09	Metal ores, other mining and quarrying products.....	1	1	1	1	1	1	1	1
9	C	Manufactured products.....	160	133	111	113	111	106	107	108
10	10-12	Food products, beverages, tobacco products.....	17	14	12	11	12	11	11	11
11	13-15	Textiles, wearing apparel, leather and related products.....	2	2	1	1	1	1	1	1
12	16	Wood and products of wood and cork, except furniture.....	2	2	2	1	2	1	1	1
13	17	Paper and paper products.....	4	3	3	2	2	2	2	2
14	18	Printing and recording services.....	2	2	2	1	1	1	1	1
15	19	Coke and refined petroleum products.....	5	5	4	4	5	4	5	5
16	19.1	Coke oven products.....	0	0	0	0	0	0	0	0
17	19.2	Refined petroleum products.....	5	5	4	4	5	4	4	5
18	20	Chemicals and chemical products.....	12	10	8	8	8	8	8	8
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	3	3	2	2	2	2	2	2
20	22	Rubber and plastic products.....	6	5	4	4	4	4	4	4
21	23	Other non-metallic mineral products.....	4	3	3	3	3	3	3	3
22	23.1	Glass and glass products.....	1	1	1	1	1	1	1	1
23	23.2-9	Refractory products, cut, shaped and finished stone.....	3	3	2	2	2	2	2	2
24	24	Basic metals.....	8	7	6	6	6	6	6	6
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	5	4	3	3	3	3	3	3
26	24.4	Basic precious and other non-ferrous metals.....	3	2	2	2	2	2	2	2
27	24.5	Casting services of metal.....	1	1	1	1	1	1	1	1
28	25	Fabricated metal products, except machinery and equipment.....	11	9	8	10	8	7	7	8
29	26	Computer, electronic and optical products.....	9	8	6	6	6	6	6	6
30	27	Electrical equipment.....	8	7	6	5	5	5	5	5
31	28	Machinery and equipment n.e.c.....	19	16	13	13	13	13	13	13
32	29	Motor vehicles, trailers and semi-trailers.....	31	26	22	22	23	22	21	21
33	30	Other transport equipment.....	7	6	5	4	4	4	4	4
34	31-32	Furniture, other manufacture goods.....	3	3	2	2	2	2	2	2
35	33	Repair and installation services of machinery and equipment.....	4	3	3	3	3	3	3	3
36	D (35)	Electricity, gas, steam and air conditioning.....	11	10	8	7	7	7	7	7
37	35.1/.3	Electricity, transmission and distribution services, steam.....	10	9	8	6	6	6	6	6
38	35.2	Manufactured gas.....	1	1	1	1	1	1	1	1
39	E	Water supply; sewerage, waste management and remediation services.....	77	71	59	56	52	50	49	49
40	36	Natural water; water treatment and supply services.....	1	1	1	1	1	1	1	1
41	37-39	Sewerage services; waste collection and materials recovery services.....	75	70	58	55	51	49	48	48
42	37	Sewerage services, sewerage sludge.....	15	12	9	9	8	8	7	7
43	38-39	Waste collection, treatment and disposal services.....	60	58	49	47	43	42	41	40
44	F	Constructions and construction works.....	68	59	52	53	53	52	52	52
45	41-42	Building and building construction works.....	23	19	16	17	17	17	17	17
46	43	Specialised construction works.....	45	39	35	37	36	35	36	35
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	301	250	205	199	190	181	183	181
48	45	Wholesale and retail trade and repair services of motor vehicles.....	42	35	29	25	23	22	22	22
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	93	82	73	73	71	69	70	70
50	47	Retail trade services, except of motor vehicles and motorcycles.....	165	133	102	100	96	91	91	89
51	H	Transportation and storage services.....	84	88	90	90	88	91	96	97
52	49.1-2	Passenger rail transport services, freight rail transport services.....	0	0	0	0	0	0	0	0
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	49	52	52	54	53	53	58	59
54	50	Water transport services.....	0	0	0	0	0	0	2	2
55	51	Air transport services.....	0	0	0	0	0	0	0	0
56	52	Warehousing and support services for transportation.....	23	24	26	25	25	27	18	18
57	53	Postal and courier services.....	10	11	11	9	9	10	17	18
58	I	Accommodation and food services.....	21	17	13	13	13	12	12	12
59	J	Information and communication services.....	51	44	33	38	36	35	34	34
60	K	Financial and insurance services.....	14	12	10	10	10	9	9	10
61	L	Real estate services.....	34	28	21	21	22	21	21	21
62	M	Professional, scientific and technical services.....	309	250	184	174	165	157	156	154
63	N	Administrative and support services.....	19	15	13	13	13	13	13	13
64	O	Public administration and defence services.....	54	46	35	33	31	30	29	28
65	P	Education services.....	5	4	3	3	3	3	3	3
66	Q	Human health and social work services.....	60	48	38	40	41	39	41	43
67	R-T	Other services.....	87	74	56	53	50	47	46	46
68		All homogeneous branches.....	1,371	1,162	943	927	895	864	869	868
69		Private households.....	28,264	22,376	16,350	15,827	14,471	13,632	13,187	12,620
70		All homogeneous branches and private households (residents concept).....	29,635	23,537	17,293	16,755	15,366	14,496	14,056	13,488
71		Transitional balance 2.....	-1,127	-2,130	-2,009	-1,966	-1,866	-1,545	-1,428	-1,646
72		Total emissions (domestic concept).....	28,508	21,407	15,284	14,789	13,500	12,951	12,627	11,842

¹ Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

² Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.10.1: Direct SO₂ emissions

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	4,126	1,880	1,856	1,831	3,386	2,017	2,071	1,957
2	01	Products of agriculture, hunting and related services.....	3,932	1,765	1,812	1,792	3,349	1,980	2,032	1,920
3	02	Products of forestry, logging and related services.....	46	2	2	2	1	1	1	1
4	03	Fish and other fishing products; aquaculture products.....	148	113	42	37	36	36	38	36
5	B	Mining and quarrying.....	3,061	3,476	2,621	4,292	1,975	2,064	1,675	1,639
6	05	Coal and lignite.....	1,554	1,768	1,568	3,061	1,014	989	1,068	1,064
7	06	Crude petroleum and natural gas.....	336	178	111	143	106	100	103	96
8	07-09	Metal ores, other mining and quarrying products.....	1,171	1,530	942	1,088	855	975	504	479
9	C	Manufactured products.....	195,761	168,512	145,295	143,201	136,945	135,328	126,944	125,730
10	10-12	Food products, beverages, tobacco products.....	10,540	5,514	3,593	3,654	3,616	2,938	3,111	2,690
11	13-15	Textiles, wearing apparel, leather and related products.....	810	560	175	95	96	165	123	63
12	16	Wood and products of wood and cork, except furniture.....	917	644	794	811	514	457	576	545
13	17	Paper and paper products.....	5,969	6,112	5,572	4,988	4,664	4,624	4,241	3,308
14	18	Printing and recording services.....	165	103	35	23	21	18	13	13
15	19	Coke and refined petroleum products.....	54,774	52,897	38,622	36,922	35,800	34,630	28,056	27,142
16	19.1	Coke oven products.....	2,999	2,315	1,802	1,762	1,775	1,824	1,934	1,940
17	19.2	Refined petroleum products.....	51,776	50,582	36,821	35,160	34,025	32,805	26,122	25,202
18	20	Chemicals and chemical products.....	33,146	31,427	34,518	33,583	32,279	32,241	28,140	27,312
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	945	66	39	61	44	42	46	41
20	22	Rubber and plastic products.....	601	415	561	363	286	300	208	162
21	23	Other non-metallic mineral products.....	26,949	20,914	21,811	22,683	21,501	21,397	23,588	23,415
22	23.1	Glass and glass products.....	11,302	8,151	9,663	9,749	9,263	9,660	9,991	10,092
23	23.2-9	Refractory products, cut, shaped and finished stone.....	15,647	12,763	12,148	12,934	12,238	11,737	13,597	13,323
24	24	Basic metals.....	56,092	46,900	37,534	38,091	36,459	37,130	37,753	40,117
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	43,849	36,540	30,530	30,642	29,304	29,383	29,732	31,924
26	24.4	Basic precious and other non-ferrous metals.....	11,083	9,501	6,200	6,445	6,210	6,785	7,176	7,400
27	24.5	Casting services of metal.....	1,161	860	804	1,005	944	962	845	793
28	25	Fabricated metal products, except machinery and equipment.....	1,336	709	495	399	392	362	336	376
29	26	Computer, electronic and optical products.....	339	160	58	39	46	43	34	24
30	27	Electrical equipment.....	608	406	207	190	193	115	142	73
31	28	Machinery and equipment n.e.c.....	1,287	679	584	487	464	420	357	214
32	29	Motor vehicles, trailers and semi-trailers.....	801	704	387	392	343	223	72	84
33	30	Other transport equipment.....	92	39	80	18	18	20	16	16
34	31-32	Furniture, other manufacture goods.....	369	261	194	157	146	142	107	110
35	33	Repair and installation services of machinery and equipment.....	20	4	38	245	63	61	25	25
36	D (35)	Electricity, gas, steam and air conditioning.....	308,942	217,739	207,025	207,203	209,758	208,735	203,816	199,922
37	35.1/.3	Electricity, transmission and distribution services, steam.....	308,937	217,738	206,987	207,157	209,603	207,275	202,174	198,278
38	35.2	Manufactured gas.....	5	0	38	46	155	1,460	1,641	1,644
39	E	Water supply; sewerage, waste management and remediation services.....	1,779	347	620	976	395	1,334	1,001	986
40	36	Natural water; water treatment and supply services.....	22	1	1	1	1	1	1	1
41	37-39	Sewerage services; waste collection and materials recovery services.....	1,757	346	619	975	394	1,333	1,000	985
42	37	Sewerage services, sewerage sludge.....	85	3	3	3	3	3	3	3
43	38-39	Waste collection, treatment and disposal services.....	1,672	343	616	973	392	1,331	998	983
44	F	Constructions and construction works.....	3,288	1,303	380	139	165	101	92	92
45	41-42	Building and building construction works.....	1,502	592	129	46	53	34	31	31
46	43	Specialised construction works.....	1,786	712	251	93	112	67	61	61
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	9,032	4,304	2,013	1,351	607	278	388	346
48	45	Wholesale and retail trade and repair services of motor vehicles.....	1,600	557	299	128	104	48	58	44
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	2,438	802	367	415	149	76	101	94
50	47	Retail trade services, except of motor vehicles and motorcycles.....	4,994	2,945	1,347	807	354	154	229	208
51	H	Transportation and storage services.....	73,161	311,657	155,446	129,420	155,498	158,386	147,984	150,232
52	49.1-2	Passenger rail transport services, freight rail transport services.....	622	194	214	231	238	235	227	226
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	1,701	65	63	64	63	64	69	72
54	50	Water transport services.....	66,626	308,652	153,316	127,397	153,330	156,226	145,877	148,139
55	51	Air transport services.....	2,634	2,310	1,695	1,658	1,788	1,799	1,751	1,733
56	52	Warehousing and support services for transportation.....	1,095	329	122	55	62	48	36	37
57	53	Postal and courier services.....	483	107	35	15	16	15	23	25
58	I	Accommodation and food services.....	2,453	1,721	743	394	246	109	414	234
59	J	Information and communication services.....	1,150	720	169	53	62	37	32	32
60	K	Financial and insurance services.....	1,045	732	163	39	51	27	22	21
61	L	Real estate services.....	293	148	36	11	13	8	7	7
62	M	Professional, scientific and technical services.....	1,802	984	290	91	109	67	62	62
63	N	Administrative and support services.....	253	228	98	27	31	16	19	20
64	O	Public administration and defence services.....	4,699	3,054	2,893	3,154	1,474	583	609	594
65	P	Education services.....	1,735	1,282	594	338	473	238	250	235
66	Q	Human health and social work services.....	2,946	1,935	1,317	966	745	370	429	431
67	R-T	Other services.....	2,272	1,363	582	586	684	373	400	393
68		All homogeneous branches.....	617,800	721,386	522,140	494,070	512,616	510,074	486,215	482,935
69		Private households.....	80,558	49,094	37,929	30,413	19,595	16,858	14,412	14,975
70		All homogeneous branches and private households (residents concept) 2.....	698,358	770,480	560,070	524,483	532,210	526,932	500,627	497,910
71		Transitional balance 3.....	29,973	-192,107	-106,507	-81,433	-110,126	-117,927	-108,614	-118,851
72		Total emissions (domestic concept) 2.....	728,331	578,373	453,563	443,050	422,084	409,005	392,013	379,059

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

3 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.10.2: Direct SO₂ emissions per unit energy consumption (not including road transport)

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	4,029	1,877	1,852	1,827	3,383	2,014	2,067	1,953
2	01	Products of agriculture, hunting and related services.....	3,844	1,762	1,809	1,789	3,346	1,977	2,028	1,916
3	02	Products of forestry, logging and related services.....	38	2	2	1	1	1	1	1
4	03	Fish and other fishing products; aquaculture products.....	147	113	42	37	36	36	38	35
5	B	Mining and quarrying.....	1,455	2,194	1,508	3,118	922	1,092	585	556
6	05	Coal and lignite.....	297	656	564	2,030	67	117	81	76
7	06	Crude petroleum and natural gas.....	3	8	2	1	1	1	1	2
8	07-09	Metal ores, other mining and quarrying products.....	1,155	1,530	941	1,088	854	975	503	478
9	C	Manufactured products.....	86,687	75,394	61,821	57,442	54,102	52,164	46,220	45,459
10	10-12	Food products, beverages, tobacco products.....	10,460	5,511	3,590	3,651	3,613	2,934	3,108	2,686
11	13-15	Textiles, wearing apparel, leather and related products.....	800	559	175	95	95	165	122	62
12	16	Wood and products of wood and cork, except furniture.....	906	643	793	811	514	457	575	545
13	17	Paper and paper products.....	5,323	5,297	4,953	4,361	4,019	3,986	3,608	2,673
14	18	Printing and recording services.....	155	103	35	22	21	17	13	13
15	19	Coke and refined petroleum products.....	47,963	48,459	35,415	33,424	32,460	31,465	24,952	23,947
16	19.1	Coke oven products.....	2,998	2,315	1,802	1,762	1,775	1,824	1,934	1,940
17	19.2	Refined petroleum products.....	44,964	46,144	33,613	31,662	30,685	29,641	23,018	22,007
18	20	Chemicals and chemical products.....	8,287	5,155	9,039	7,418	6,681	6,817	6,161	6,014
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	931	65	39	60	43	41	45	40
20	22	Rubber and plastic products.....	571	414	560	362	285	299	207	161
21	23	Other non-metallic mineral products.....	3,575	3,419	3,680	3,925	3,443	3,374	5,073	5,131
22	23.1	Glass and glass products.....	43	200	38	78	35	16	12	140
23	23.2-9	Refractory products, cut, shaped and finished stone.....	3,532	3,219	3,641	3,848	3,408	3,359	5,061	4,991
24	24	Basic metals.....	3,316	2,820	1,518	1,404	1,281	1,240	1,283	3,282
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	1,018	1,025	766	651	523	544	631	2,552
26	24.4	Basic precious and other non-ferrous metals.....	2,195	1,747	682	611	624	518	595	714
27	24.5	Casting services of metal.....	103	48	70	142	133	179	56	17
28	25	Fabricated metal products, except machinery and equipment.....	1,284	707	493	396	390	360	334	374
29	26	Computer, electronic and optical products.....	295	158	56	37	44	42	33	22
30	27	Electrical equipment.....	570	404	205	189	191	114	140	72
31	28	Machinery and equipment n.e.c.....	1,199	676	580	483	460	416	353	210
32	29	Motor vehicles, trailers and semi-trailers.....	638	698	381	386	337	217	66	78
33	30	Other transport equipment.....	61	38	79	17	17	19	15	15
34	31-32	Furniture, other manufacture goods.....	352	261	194	157	145	141	107	109
35	33	Repair and installation services of machinery and equipment.....	0	3	37	245	63	61	25	24
36	D (35)	Electricity, gas, steam and air conditioning.....	308,883	217,736	207,022	207,200	209,756	208,732	203,813	199,919
37	35.1/.3	Electricity, transmission and distribution services, steam.....	308,883	217,736	206,984	207,155	209,601	207,272	202,172	198,276
38	35.2	Manufactured gas.....	0	0	38	45	155	1,460	1,641	1,643
39	E	Water supply; sewerage, waste management and remediation services.....	551	307	582	939	360	1,300	967	952
40	36	Natural water; water treatment and supply services.....	0	0	0	0	0	0	0	0
41	37-39	Sewerage services; waste collection and materials recovery services.....	551	307	582	939	360	1,300	967	952
42	37	Sewerage services, sewerage sludge.....	0	0	0	0	0	0	0	0
43	38-39	Waste collection, treatment and disposal services.....	551	307	582	939	360	1,300	967	952
44	F	Constructions and construction works.....	2,693	1,282	357	114	139	75	66	65
45	41-42	Building and building construction works.....	1,323	585	122	38	45	26	23	23
46	43	Specialised construction works.....	1,371	697	235	75	95	49	43	42
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	7,606	4,256	1,961	1,299	555	228	337	294
48	45	Wholesale and retail trade and repair services of motor vehicles.....	1,405	551	292	124	100	44	54	40
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	1,463	771	332	379	113	41	65	57
50	47	Retail trade services, except of motor vehicles and motorcycles.....	4,737	2,934	1,336	796	343	143	218	196
51	H	Transportation and storage services.....	70,253	311,566	155,346	129,319	155,398	158,284	147,880	150,124
52	49.1-2	Passenger rail transport services, freight rail transport services.....	608	193	213	231	238	234	227	226
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	0	12	4	3	4	5	6	6
54	50	Water transport services.....	66,616	308,652	153,316	127,396	153,329	156,226	145,875	148,137
55	51	Air transport services.....	2,624	2,310	1,695	1,657	1,787	1,798	1,750	1,733
56	52	Warehousing and support services for transportation.....	274	303	94	26	34	18	16	17
57	53	Postal and courier services.....	131	96	23	5	6	3	5	5
58	I	Accommodation and food services.....	2,430	1,720	742	393	244	108	413	232
59	J	Information and communication services.....	807	709	158	39	49	25	20	19
60	K	Financial and insurance services.....	1,013	731	162	38	49	25	21	20
61	L	Real estate services.....	211	145	33	8	10	5	3	3
62	M	Professional, scientific and technical services.....	1,063	955	262	63	81	40	35	35
63	N	Administrative and support services.....	207	226	96	25	28	13	16	18
64	O	Public administration and defence services.....	4,438	3,045	2,883	3,145	1,465	573	599	584
65	P	Education services.....	2,716	1,281	593	337	473	237	249	235
66	Q	Human health and social work services.....	1,874	1,932	1,314	962	741	366	426	427
67	R-T	Other services.....	1,701	1,303	515	516	614	301	323	311
68		All homogeneous branches.....	498,615	626,657	437,204	406,783	428,369	425,583	404,039	401,206
69		Private households.....	70,496	48,421	37,268	29,756	18,930	16,204	13,731	14,280
70		All homogeneous branches and private households (residents concept) 2.....	569,111	675,078	474,471	436,539	447,299	441,786	417,771	415,486
71		Transitional balance 3.....	29,483	-192,035	-106,427	-81,351	-110,047	-117,857	-108,546	-118,774
72		Total emissions (domestic concept) 2.....	598,594	483,043	368,044	355,188	337,253	323,929	309,224	296,712

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

3 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.10.3: Direct SO₂ process emissions

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	-	-	-	-	-	-	-	-
2	01	Products of agriculture, hunting and related services.....	-	-	-	-	-	-	-	-
3	02	Products of forestry, logging and related services.....	-	-	-	-	-	-	-	-
4	03	Fish and other fishing products; aquaculture products.....	-	-	-	-	-	-	-	-
5	B	Mining and quarrying.....	1,572	1,281	1,112	1,173	1,052	971	1,089	1,082
6	05	Coal and lignite.....	1,247	1,112	1,003	1,031	947	872	987	988
7	06	Crude petroleum and natural gas.....	325	169	109	142	105	99	102	94
8	07-09	Metal ores, other mining and quarrying products.....	-	-	-	-	-	-	-	-
9	C	Manufactured products.....	108,308	93,092	83,446	85,729	82,812	83,133	80,693	80,241
10	10-12	Food products, beverages, tobacco products.....	-	-	-	-	-	-	-	-
11	13-15	Textiles, wearing apparel, leather and related products.....	-	-	-	-	-	-	-	-
12	16	Wood and products of wood and cork, except furniture.....	-	-	-	-	-	-	-	-
13	17	Paper and paper products.....	629	814	618	627	644	638	632	634
14	18	Printing and recording services.....	-	-	-	-	-	-	-	-
15	19	Coke and refined petroleum products.....	6,785	4,437	3,206	3,497	3,338	3,163	3,102	3,194
16	19.1	Coke oven products.....	-	-	-	-	-	-	-	-
17	19.2	Refined petroleum products.....	6,785	4,437	3,206	3,497	3,338	3,163	3,102	3,194
18	20	Chemicals and chemical products.....	24,802	26,269	25,477	26,163	25,596	25,422	21,976	21,297
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	-	-	-	-	-	-	-	-
20	22	Rubber and plastic products.....	-	-	-	-	-	-	-	-
21	23	Other non-metallic mineral products.....	23,356	17,493	18,130	18,757	18,057	18,022	18,514	18,283
22	23.1	Glass and glass products.....	11,255	7,950	9,624	9,671	9,227	9,644	9,979	9,952
23	23.2-9	Refractory products, cut, shaped and finished stone.....	12,101	9,543	8,506	9,086	8,830	8,378	8,535	8,331
24	24	Basic metals.....	52,735	44,078	36,014	36,686	35,176	35,888	36,468	36,833
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	42,808	35,514	29,762	29,990	28,780	28,838	29,100	29,371
26	24.4	Basic precious and other non-ferrous metals.....	8,875	7,753	5,517	5,833	5,586	6,266	6,580	6,685
27	24.5	Casting services of metal.....	1,052	811	734	863	811	783	789	776
28	25	Fabricated metal products, except machinery and equipment.....	-	-	-	-	-	-	-	-
29	26	Computer, electronic and optical products.....	-	-	-	-	-	-	-	-
30	27	Electrical equipment.....	-	-	-	-	-	-	-	-
31	28	Machinery and equipment n.e.c.....	-	-	-	-	-	-	-	-
32	29	Motor vehicles, trailers and semi-trailers.....	-	-	-	-	-	-	-	-
33	30	Other transport equipment.....	-	-	-	-	-	-	-	-
34	31-32	Furniture, other manufacture goods.....	-	-	-	-	-	-	-	-
35	33	Repair and installation services of machinery and equipment.....	-	-	-	-	-	-	-	-
36	D (35)	Electricity, gas, steam and air conditioning.....	-	-	-	-	-	-	-	-
37	35.1/.3	Electricity, transmission and distribution services, steam.....	-	-	-	-	-	-	-	-
38	35.2	Manufactured gas.....	-	-	-	-	-	-	-	-
39	E	Water supply; sewerage, waste management and remediation services.....	-	-	-	-	-	-	-	-
40	36	Natural water; water treatment and supply services.....	-	-	-	-	-	-	-	-
41	37-39	Sewerage services; waste collection and materials recovery services.....	-	-	-	-	-	-	-	-
42	37	Sewerage services, sewerage sludge.....	-	-	-	-	-	-	-	-
43	38-39	Waste collection, treatment and disposal services.....	-	-	-	-	-	-	-	-
44	F	Constructions and construction works.....	-	-	-	-	-	-	-	-
45	41-42	Building and building construction works.....	-	-	-	-	-	-	-	-
46	43	Specialised construction works.....	-	-	-	-	-	-	-	-
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	-	-	-	-	-	-	-	-
48	45	Wholesale and retail trade and repair services of motor vehicles.....	-	-	-	-	-	-	-	-
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
50	47	Retail trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
51	H	Transportation and storage services.....	-	-	-	-	-	-	-	-
52	49.1-2	Passenger rail transport services, freight rail transport services.....	-	-	-	-	-	-	-	-
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	-	-	-	-	-	-	-	-
54	50	Water transport services.....	-	-	-	-	-	-	-	-
55	51	Air transport services.....	-	-	-	-	-	-	-	-
56	52	Warehousing and support services for transportation.....	-	-	-	-	-	-	-	-
57	53	Postal and courier services.....	-	-	-	-	-	-	-	-
58	I	Accommodation and food services.....	-	-	-	-	-	-	-	-
59	J	Information and communication services.....	-	-	-	-	-	-	-	-
60	K	Financial and insurance services.....	-	-	-	-	-	-	-	-
61	L	Real estate services.....	-	-	-	-	-	-	-	-
62	M	Professional, scientific and technical services.....	-	-	-	-	-	-	-	-
63	N	Administrative and support services.....	-	-	-	-	-	-	-	-
64	O	Public administration and defence services.....	-	-	-	-	-	-	-	-
65	P	Education services.....	-	-	-	-	-	-	-	-
66	Q	Human health and social work services.....	-	-	-	-	-	-	-	-
67	R-T	Other services.....	37	41	48	52	52	54	59	65
68		All homogeneous branches.....	109,917	94,414	84,606	86,953	83,916	84,158	81,842	81,388
69		Private households.....	146	115	129	117	129	114	136	148
70		All homogeneous branches and private households.....	110,063	94,529	84,735	87,070	84,045	84,272	81,978	81,536

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

Table 4.10.4: Direct SO₂ emissions of road transport
tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	97	3	4	4	4	4	4	4
2	01	Products of agriculture, hunting and related services.....	88	3	3	3	3	4	4	4
3	02	Products of forestry, logging and related services.....	8	0	0	0	0	0	0	0
4	03	Fish and other fishing products; aquaculture products.....	1	0	0	0	0	0	0	0
5	B	Mining and quarrying.....	34	1	1	1	1	1	1	1
6	05	Coal and lignite.....	10	0	0	0	0	0	0	0
7	06	Crude petroleum and natural gas.....	8	0	0	0	0	0	0	0
8	07-09	Metal ores, other mining and quarrying products.....	17	1	1	1	1	1	1	1
9	C	Manufactured products.....	767	27	29	30	31	31	31	31
10	10-12	Food products, beverages, tobacco products.....	80	3	3	3	3	3	3	3
11	13-15	Textiles, wearing apparel, leather and related products.....	10	0	0	0	0	0	0	0
12	16	Wood and products of wood and cork, except furniture.....	11	0	0	0	0	0	0	0
13	17	Paper and paper products.....	18	1	1	1	1	1	1	1
14	18	Printing and recording services.....	10	0	0	0	0	0	0	0
15	19	Coke and refined petroleum products.....	26	1	1	1	1	1	1	1
16	19.1	Coke oven products.....	0	0	0	0	0	0	0	0
17	19.2	Refined petroleum products.....	26	1	1	1	1	1	1	1
18	20	Chemicals and chemical products.....	56	2	2	2	2	2	2	2
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	15	1	1	1	1	1	1	1
20	22	Rubber and plastic products.....	30	1	1	1	1	1	1	1
21	23	Other non-metallic mineral products.....	18	1	1	1	1	1	1	1
22	23.1	Glass and glass products.....	4	0	0	0	0	0	0	0
23	23.2-9	Refractory products, cut, shaped and finished stone.....	14	0	1	1	1	1	1	1
24	24	Basic metals.....	41	1	2	2	2	2	2	2
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	22	1	1	1	1	1	1	1
26	24.4	Basic precious and other non-ferrous metals.....	13	0	0	1	1	1	1	1
27	24.5	Casting services of metal.....	6	0	0	0	0	0	0	0
28	25	Fabricated metal products, except machinery and equipment.....	52	2	2	3	2	2	2	2
29	26	Computer, electronic and optical products.....	44	2	2	2	2	2	2	2
30	27	Electrical equipment.....	38	1	1	1	2	1	1	1
31	28	Machinery and equipment n.e.c.....	88	3	3	3	4	4	4	4
32	29	Motor vehicles, trailers and semi-trailers.....	163	6	6	6	6	6	6	6
33	30	Other transport equipment.....	31	1	1	1	1	1	1	1
34	31-32	Furniture, other manufacture goods.....	17	1	1	1	1	1	1	1
35	33	Repair and installation services of machinery and equipment.....	19	1	1	1	1	1	1	1
36	D (35)	Electricity, gas, steam and air conditioning.....	59	2	3	2	3	3	3	3
37	35.1/.3	Electricity, transmission and distribution services, steam.....	54	2	2	2	2	2	2	2
38	35.2	Manufactured gas.....	5	0	0	0	0	0	0	0
39	E	Water supply; sewerage, waste management and remediation services.....	1,227	39	38	37	35	34	34	34
40	36	Natural water; water treatment and supply services.....	22	1	1	1	1	1	1	1
41	37-39	Sewerage services; waste collection and materials recovery services.....	1,206	39	38	37	34	34	33	33
42	37	Sewerage services, sewerage sludge.....	85	3	3	3	3	3	3	3
43	38-39	Waste collection, treatment and disposal services.....	1,120	36	35	34	31	31	30	31
44	F	Constructions and construction works.....	595	22	23	25	25	26	27	28
45	41-42	Building and building construction works.....	180	7	7	8	8	8	9	9
46	43	Specialised construction works.....	416	15	16	17	17	18	18	19
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	1,427	49	53	51	51	51	51	52
48	45	Wholesale and retail trade and repair services of motor vehicles.....	194	7	7	4	4	4	4	4
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	975	31	35	36	36	35	36	36
50	47	Retail trade services, except of motor vehicles and motorcycles.....	257	10	11	11	11	11	11	12
51	H	Transportation and storage services.....	2,908	91	100	101	99	102	104	108
52	49.1-2	Passenger rail transport services, freight rail transport services.....	14	0	0	0	0	0	0	0
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	1,701	53	58	60	60	59	63	66
54	50	Water transport services.....	10	0	0	0	0	0	2	2
55	51	Air transport services.....	10	0	0	0	0	0	0	0
56	52	Warehousing and support services for transportation.....	822	26	29	29	29	30	20	20
57	53	Postal and courier services.....	351	11	12	10	10	12	19	19
58	I	Accommodation and food services.....	24	1	1	1	1	1	1	1
59	J	Information and communication services.....	343	12	11	14	13	13	13	13
60	K	Financial and insurance services.....	32	1	1	1	2	2	1	2
61	L	Real estate services.....	83	3	3	3	3	4	4	4
62	M	Professional, scientific and technical services.....	739	29	28	28	28	27	27	27
63	N	Administrative and support services.....	46	2	2	2	3	3	3	3
64	O	Public administration and defence services.....	261	9	10	9	10	10	10	10
65	P	Education services.....	19	1	1	1	1	1	1	1
66	Q	Human health and social work services.....	72	3	3	3	4	4	4	4
67	R-T	Other services.....	535	19	19	18	18	18	17	17
68		All homogeneous branches.....	9,267	315	330	334	330	333	334	341
69		Private households.....	9,917	558	533	540	535	541	544	548
70		All homogeneous branches and private households (residents concept).....	19,184	873	863	874	865	874	878	889
71		Transitional balance 2.....	490	-72	-80	-81	-79	-70	-67	-77
72		Total emissions (domestic concept).....	19,674	801	784	792	787	804	811	811

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.11.1: Direct NO_x emissions

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	185,146	166,650	160,488	169,153	166,483	166,490	168,262	173,495
2	01	Products of agriculture, hunting and related services.....	181,706	163,526	158,125	166,922	164,564	164,640	166,435	171,793
3	02	Products of forestry, logging and related services.....	2,786	2,525	1,791	1,699	1,405	1,339	1,278	1,206
4	03	Fish and other fishing products; aquaculture products.....	655	599	572	532	515	511	550	496
5	B	Mining and quarrying.....	4,527	5,461	3,557	4,230	2,307	2,368	2,093	2,104
6	05	Coal and lignite.....	1,137	1,354	1,188	2,329	567	528	517	501
7	06	Crude petroleum and natural gas.....	1,511	2,260	862	548	499	498	517	496
8	07-09	Metal ores, other mining and quarrying products.....	1,879	1,848	1,508	1,353	1,242	1,341	1,059	1,107
9	C	Manufactured products.....	252,713	222,958	199,630	198,911	187,855	184,113	181,813	175,866
10	10-12	Food products, beverages, tobacco products.....	13,548	12,696	11,348	10,343	10,216	9,499	9,424	8,352
11	13-15	Textiles, wearing apparel, leather and related products.....	2,169	1,831	1,085	980	898	893	805	726
12	16	Wood and products of wood and cork, except furniture.....	2,616	5,911	7,337	9,216	5,557	6,333	8,743	8,120
13	17	Paper and paper products.....	10,234	11,315	12,067	10,562	9,779	9,751	9,344	9,239
14	18	Printing and recording services.....	1,230	1,122	849	728	751	725	661	625
15	19	Coke and refined petroleum products.....	33,831	27,145	22,128	21,757	21,280	20,876	19,374	19,350
16	19.1	Coke oven products.....	10,344	4,759	4,335	4,240	4,271	4,389	4,652	4,667
17	19.2	Refined petroleum products.....	23,487	22,386	17,793	17,517	17,009	16,487	14,722	14,682
18	20	Chemicals and chemical products.....	41,388	43,853	46,372	46,668	45,273	44,773	44,285	42,291
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	3,159	1,283	1,173	1,237	1,294	1,220	1,054	981
20	22	Rubber and plastic products.....	3,386	3,344	2,983	2,586	2,532	2,442	2,275	2,317
21	23	Other non-metallic mineral products.....	62,240	49,258	41,182	42,389	40,183	38,625	39,071	37,707
22	23.1	Glass and glass products.....	14,756	14,122	12,637	12,802	12,115	12,265	12,677	12,639
23	23.2-9	Refractory products, cut, shaped and finished stone.....	47,484	35,136	28,545	29,587	28,068	26,360	26,393	25,069
24	24	Basic metals.....	44,244	34,568	28,600	28,969	27,376	27,060	27,216	28,053
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	39,859	30,293	25,211	25,458	23,946	23,708	23,981	24,756
26	24.4	Basic precious and other non-ferrous metals.....	2,788	2,745	2,012	1,974	1,940	2,109	1,924	1,924
27	24.5	Casting services of metal.....	1,597	1,530	1,377	1,530	1,456	1,412	1,126	1,372
28	25	Fabricated metal products, except machinery and equipment.....	5,814	5,216	4,647	4,996	4,221	4,139	3,780	3,706
29	26	Computer, electronic and optical products.....	3,028	2,456	1,763	1,747	1,705	1,663	1,473	1,293
30	27	Electrical equipment.....	2,574	2,115	1,722	1,611	1,535	1,445	1,362	1,255
31	28	Machinery and equipment n.e.c.....	7,100	6,373	5,037	4,714	4,767	4,539	4,064	3,637
32	29	Motor vehicles, trailers and semi-trailers.....	11,156	9,795	7,275	6,630	6,644	6,395	5,558	5,117
33	30	Other transport equipment.....	2,195	1,842	1,438	1,260	1,288	1,275	1,137	1,026
34	31-32	Furniture, other manufacture goods.....	1,707	1,933	1,774	1,712	1,757	1,703	1,465	1,426
35	33	Repair and installation services of machinery and equipment.....	1,093	902	851	808	798	758	721	645
36	D (35)	Electricity, gas, steam and air conditioning.....	272,028	289,318	321,170	325,318	318,316	322,077	310,250	303,923
37	35.1/.3	Electricity, transmission and distribution services, steam.....	271,616	289,003	320,823	324,937	317,735	318,722	306,392	300,068
38	35.2	Manufactured gas.....	412	314	347	381	581	3,355	3,858	3,855
39	E	Water supply; sewerage, waste management and remediation services.....	69,928	59,240	39,607	36,342	32,373	30,785	27,113	23,653
40	36	Natural water; water treatment and supply services.....	1,355	1,143	774	676	605	597	550	493
41	37-39	Sewerage services; waste collection and materials recovery services.....	68,574	58,097	38,833	35,665	31,768	30,188	26,563	23,161
42	37	Sewerage services, sewerage sludge.....	5,446	4,473	2,963	2,640	2,446	2,354	2,191	1,998
43	38-39	Waste collection, treatment and disposal services.....	63,128	53,624	35,870	33,025	29,322	27,834	24,371	21,163
44	F	Constructions and construction works.....	86,423	62,358	45,736	46,123	42,988	42,109	40,802	39,288
45	41-42	Building and building construction works.....	35,190	24,882	18,341	18,433	17,407	17,030	16,548	15,987
46	43	Specialised construction works.....	51,233	37,476	27,395	27,690	25,582	25,079	24,254	23,301
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	82,291	68,528	50,947	46,737	44,626	42,936	38,546	33,871
48	45	Wholesale and retail trade and repair services of motor vehicles.....	11,824	9,496	6,942	3,927	3,653	3,567	3,406	3,135
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	50,018	42,654	31,475	30,719	29,206	27,811	24,243	20,477
50	47	Retail trade services, except of motor vehicles and motorcycles.....	20,449	16,378	12,530	12,091	11,767	11,558	10,896	10,258
51	H	Transportation and storage services.....	371,983	588,654	676,722	602,796	667,446	689,686	652,051	664,722
52	49.1-2	Passenger rail transport services, freight rail transport services.....	31,959	21,257	15,842	16,304	13,572	13,149	11,797	10,881
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	82,925	75,995	55,637	54,085	51,276	48,844	43,701	37,086
54	50	Water transport services.....	84,189	312,104	426,009	359,729	418,471	436,126	415,906	441,427
55	51	Air transport services.....	115,205	129,394	142,174	138,777	152,299	158,513	154,617	153,059
56	52	Warehousing and support services for transportation.....	40,395	34,957	26,222	24,945	23,532	23,847	13,456	11,528
57	53	Postal and courier services.....	17,311	14,947	10,839	8,955	8,297	9,207	12,574	10,740
58	I	Accommodation and food services.....	4,901	4,184	3,723	3,600	3,585	3,635	3,399	3,267
59	J	Information and communication services.....	20,428	17,281	11,312	12,749	11,731	11,183	10,021	8,967
60	K	Financial and insurance services.....	2,591	2,221	1,709	1,636	1,683	1,722	1,554	1,439
61	L	Real estate services.....	5,611	4,418	2,968	2,804	2,763	2,689	2,659	2,607
62	M	Professional, scientific and technical services.....	50,179	39,638	25,980	23,857	22,772	21,712	20,802	19,806
63	N	Administrative and support services.....	3,174	2,557	2,125	2,193	2,263	2,258	2,256	2,076
64	O	Public administration and defence services.....	32,674	29,777	20,855	19,409	19,136	17,951	17,566	16,721
65	P	Education services.....	3,688	3,227	2,809	2,608	2,833	2,721	2,409	2,358
66	Q	Human health and social work services.....	6,939	5,766	5,511	5,237	5,698	5,446	5,364	5,503
67	R-T	Other services.....	36,765	29,802	19,762	18,059	17,340	16,215	15,306	14,342
68		All homogeneous branches.....	1,491,990	1,602,039	1,594,612	1,521,761	1,552,198	1,566,098	1,502,267	1,494,009
69		Private households.....	567,209	432,144	310,777	291,064	287,038	287,931	275,225	276,273
70		All homogeneous branches and private households (residents concept) 2.....	2,059,199	2,034,182	1,905,389	1,812,826	1,839,237	1,854,028	1,777,492	1,770,282
71		Transitional balance 3.....	-38,996	-344,940	-439,707	-369,085	-447,993	-478,538	-450,353	-474,506
72		Total emissions (domestic concept) 2.....	2,020,203	1,689,243	1,465,682	1,443,741	1,391,243	1,375,490	1,327,139	1,295,775

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

3 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.11.2: Direct NO_x emissions per unit energy consumption (not including road transport)

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	54,717	46,792	45,837	44,148	45,929	43,213	42,905	42,767
2	01	Products of agriculture, hunting and related services.....	51,875	44,155	43,797	42,275	44,330	41,669	41,352	41,317
3	02	Products of forestry, logging and related services.....	2,254	2,092	1,504	1,371	1,110	1,057	1,025	975
4	03	Fish and other fishing products; aquaculture products.....	589	545	537	501	489	487	528	475
5	B	Mining and quarrying.....	1,961	3,289	1,931	2,754	823	968	765	889
6	05	Coal and lignite.....	218	547	521	1,770	31	63	46	51
7	06	Crude petroleum and natural gas.....	905	1,761	514	212	149	158	204	215
8	07-09	Metal ores, other mining and quarrying products.....	837	981	896	773	643	747	516	623
9	C	Manufactured products.....	88,975	81,298	83,248	81,952	73,981	72,072	71,493	70,123
10	10-12	Food products, beverages, tobacco products.....	9,015	8,980	8,684	7,904	7,647	7,034	7,149	6,347
11	13-15	Textiles, wearing apparel, leather and related products.....	1,604	1,367	752	664	604	613	547	499
12	16	Wood and products of wood and cork, except furniture.....	1,688	5,089	6,583	8,446	4,872	5,585	8,021	7,441
13	17	Paper and paper products.....	7,555	7,833	8,682	7,144	6,312	6,292	5,875	5,866
14	18	Printing and recording services.....	644	641	504	429	456	447	404	398
15	19	Coke and refined petroleum products.....	29,162	24,651	20,291	19,770	19,289	18,974	17,578	17,647
16	19.1	Coke oven products.....	10,335	4,752	4,330	4,234	4,266	4,384	4,647	4,663
17	19.2	Refined petroleum products.....	18,827	19,899	15,961	15,537	15,023	14,590	12,931	12,984
18	20	Chemicals and chemical products.....	15,773	11,629	16,127	16,906	15,519	14,199	13,843	12,975
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	2,337	610	692	805	827	769	637	614
20	22	Rubber and plastic products.....	1,674	1,940	1,974	1,636	1,570	1,520	1,425	1,568
21	23	Other non-metallic mineral products.....	4,574	3,989	4,191	4,478	4,159	4,210	4,557	4,425
22	23.1	Glass and glass products.....	1,972	1,533	1,309	1,461	1,164	1,060	1,138	1,105
23	23.2-9	Refractory products, cut, shaped and finished stone.....	2,603	2,455	2,883	3,017	2,995	3,151	3,419	3,320
24	24	Basic metals.....	5,631	4,780	5,218	4,951	4,314	4,120	4,307	5,183
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	3,236	2,235	3,236	3,022	2,425	2,238	2,499	3,230
26	24.4	Basic precious and other non-ferrous metals.....	2,063	2,150	1,583	1,516	1,498	1,495	1,698	1,562
27	24.5	Casting services of metal.....	331	395	399	413	391	388	110	391
28	25	Fabricated metal products, except machinery and equipment.....	2,874	2,804	2,916	2,709	2,533	2,524	2,290	2,392
29	26	Computer, electronic and optical products.....	571	440	316	379	392	407	317	273
30	27	Electrical equipment.....	419	346	451	402	345	330	332	346
31	28	Machinery and equipment n.e.c.....	2,149	2,313	2,124	1,843	1,785	1,696	1,440	1,323
32	29	Motor vehicles, trailers and semi-trailers.....	2,077	2,299	1,895	1,789	1,636	1,643	1,313	1,374
33	30	Other transport equipment.....	452	413	413	307	301	325	261	253
34	31-32	Furniture, other manufacture goods.....	775	1,168	1,225	1,207	1,235	1,210	1,012	1,026
35	33	Repair and installation services of machinery and equipment.....	1	7	210	182	184	173	183	171
36	D (35)	Electricity, gas, steam and air conditioning.....	267,270	285,772	318,626	323,196	316,137	319,878	308,062	301,781
37	35.1/.3	Electricity, transmission and distribution services, steam.....	267,270	285,765	318,505	323,055	315,799	316,766	304,567	298,281
38	35.2	Manufactured gas.....	0	7	122	141	339	3,112	3,495	3,500
39	E	Water supply; sewerage, waste management and remediation services.....	1,879	734	1,208	1,293	1,023	1,282	1,044	1,023
40	36	Natural water; water treatment and supply services.....	0	0	0	0	1	1	1	1
41	37-39	Sewerage services; waste collection and materials recovery services.....	1,879	734	1,208	1,293	1,021	1,281	1,043	1,022
42	37	Sewerage services, sewerage sludge.....	0	0	0	0	1	1	1	2
43	38-39	Waste collection, treatment and disposal services.....	1,879	733	1,207	1,293	1,021	1,280	1,042	1,021
44	F	Constructions and construction works.....	44,452	29,102	22,734	22,564	20,173	19,630	19,119	18,693
45	41-42	Building and building construction works.....	22,167	14,680	11,394	11,287	10,081	9,782	9,564	9,354
46	43	Specialised construction works.....	22,284	14,422	11,340	11,277	10,092	9,847	9,555	9,339
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	7,680	5,920	5,497	5,085	4,899	5,196	4,999	4,907
48	45	Wholesale and retail trade and repair services of motor vehicles.....	1,224	662	689	616	638	687	655	626
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	1,639	1,126	657	627	579	691	741	774
50	47	Retail trade services, except of motor vehicles and motorcycles.....	4,817	4,132	4,151	3,841	3,682	3,818	3,604	3,507
51	H	Transportation and storage services.....	230,241	466,075	586,877	517,395	586,704	610,290	583,015	605,954
52	49.1-2	Passenger rail transport services, freight rail transport services.....	31,254	20,648	15,407	15,899	13,318	12,908	11,660	10,766
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	0	4,295	3,396	3,113	2,715	2,720	1,825	1,438
54	50	Water transport services.....	83,710	311,690	425,713	359,451	418,209	435,876	414,545	440,269
55	51	Air transport services.....	114,713	128,968	141,870	138,490	152,026	158,256	154,473	152,936
56	52	Warehousing and support services for transportation.....	423	354	394	365	358	443	379	396
57	53	Postal and courier services.....	140	119	97	77	78	88	133	149
58	I	Accommodation and food services.....	3,438	3,057	2,933	2,797	2,762	2,834	2,602	2,480
59	J	Information and communication services.....	828	887	680	613	619	678	558	568
60	K	Financial and insurance services.....	1,067	938	735	611	626	723	598	579
61	L	Real estate services.....	213	194	149	125	125	131	93	100
62	M	Professional, scientific and technical services.....	1,565	1,588	1,481	1,327	1,335	1,496	1,349	1,377
63	N	Administrative and support services.....	291	308	362	331	305	332	402	443
64	O	Public administration and defence services.....	13,264	13,817	9,767	9,113	9,079	8,283	8,181	7,854
65	P	Education services.....	2,601	2,326	2,173	1,995	2,226	2,150	1,865	1,843
66	Q	Human health and social work services.....	3,268	2,768	3,255	2,936	3,318	3,155	3,074	3,250
67	R-T	Other services.....	2,212	1,993	1,648	1,506	1,935	1,692	1,673	1,670
68		All homogeneous branches.....	725,924	946,857	1,089,142	1,019,742	1,071,999	1,094,003	1,051,787	1,066,301
69		Private households.....	74,092	64,782	67,168	57,527	58,165	62,406	51,347	53,461
70		All homogeneous branches and private households (residents concept) 2.....	800,015	1,011,639	1,156,310	1,077,269	1,130,164	1,156,410	1,103,134	1,119,762
71		Transitional balance 3.....	-59,879	-282,464	-395,914	-326,892	-409,579	-445,670	-420,271	-443,352
72		Total emissions (domestic concept) 2.....	740,136	729,175	760,396	750,377	720,585	710,739	682,863	676,410

¹ Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

² Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

³ Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.11.3: Direct NO_x process emissions

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	123,888	114,527	110,996	121,410	117,034	119,802	122,040	127,692
2	01	Products of agriculture, hunting and related services.....	123,888	114,527	110,996	121,410	117,034	119,802	122,040	127,692
3	02	Products of forestry, logging and related services.....	-	-	-	-	-	-	-	-
4	03	Fish and other fishing products; aquaculture products.....	-	-	-	-	-	-	-	-
5	B	Mining and quarrying.....	455	414	385	399	368	318	339	335
6	05	Coal and lignite.....	321	307	314	327	306	261	284	284
7	06	Crude petroleum and natural gas.....	134	107	71	72	62	57	55	51
8	07-09	Metal ores, other mining and quarrying products.....	-	-	-	-	-	-	-	-
9	C	Manufactured products.....	120,605	106,234	90,957	92,322	89,370	88,707	88,929	86,882
10	10-12	Food products, beverages, tobacco products.....	-	-	-	-	-	-	-	-
11	13-15	Textiles, wearing apparel, leather and related products.....	-	-	-	-	-	-	-	-
12	16	Wood and products of wood and cork, except furniture.....	320	325	396	448	355	429	429	420
13	17	Paper and paper products.....	1,683	2,664	2,799	2,885	2,941	2,960	3,008	2,967
14	18	Printing and recording services.....	-	-	-	-	-	-	-	-
15	19	Coke and refined petroleum products.....	3,200	1,289	971	1,066	947	921	890	903
16	19.1	Coke oven products.....	-	-	-	-	-	-	-	-
17	19.2	Refined petroleum products.....	3,200	1,289	971	1,066	947	921	890	903
18	20	Chemicals and chemical products.....	22,453	29,632	28,382	28,014	28,023	28,913	28,908	27,964
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	-	-	-	-	-	-	-	-
20	22	Rubber and plastic products.....	-	-	-	-	-	-	-	-
21	23	Other non-metallic mineral products.....	56,627	44,418	36,380	37,318	35,447	33,861	34,001	32,830
22	23.1	Glass and glass products.....	12,536	12,386	11,183	11,208	10,823	11,083	11,426	11,434
23	23.2-9	Refractory products, cut, shaped and finished stone.....	44,091	32,033	25,198	26,110	24,624	22,778	22,575	21,396
24	24	Basic metals.....	36,322	27,907	22,028	22,591	21,657	21,623	21,694	21,799
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	35,383	27,040	21,244	21,669	20,791	20,787	20,851	20,970
26	24.4	Basic precious and other non-ferrous metals.....	-	-	-	-	-	-	-	-
27	24.5	Castings services of metal.....	940	867	784	922	866	837	843	829
28	25	Fabricated metal products, except machinery and equipment.....	-	-	-	-	-	-	-	-
29	26	Computer, electronic and optical products.....	-	-	-	-	-	-	-	-
30	27	Electrical equipment.....	-	-	-	-	-	-	-	-
31	28	Machinery and equipment n.e.c.....	-	-	-	-	-	-	-	-
32	29	Motor vehicles, trailers and semi-trailers.....	-	-	-	-	-	-	-	-
33	30	Other transport equipment.....	-	-	-	-	-	-	-	-
34	31-32	Furniture, other manufacture goods.....	-	-	-	-	-	-	-	-
35	33	Repair and installation services of machinery and equipment.....	-	-	-	-	-	-	-	-
36	D (35)	Electricity, gas, steam and air conditioning.....	-	-	-	-	-	-	-	-
37	35.1/.3	Electricity, transmission and distribution services, steam.....	-	-	-	-	-	-	-	-
38	35.2	Manufactured gas.....	-	-	-	-	-	-	-	-
39	E	Water supply; sewerage, waste management and remediation services.....	-	-	-	-	-	-	-	-
40	36	Natural water; water treatment and supply services.....	-	-	-	-	-	-	-	-
41	37-39	Sewerage services; waste collection and materials recovery services.....	-	-	-	-	-	-	-	-
42	37	Sewerage services, sewerage sludge.....	-	-	-	-	-	-	-	-
43	38-39	Waste collection, treatment and disposal services.....	-	-	-	-	-	-	-	-
44	F	Constructions and construction works.....	-	-	-	-	-	-	-	-
45	41-42	Building and building construction works.....	-	-	-	-	-	-	-	-
46	43	Specialised construction works.....	-	-	-	-	-	-	-	-
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	-	-	-	-	-	-	-	-
48	45	Wholesale and retail trade and repair services of motor vehicles.....	-	-	-	-	-	-	-	-
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
50	47	Retail trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
51	H	Transportation and storage services.....	-	-	-	-	-	-	-	-
52	49.1-2	Passenger rail transport services, freight rail transport services.....	-	-	-	-	-	-	-	-
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	-	-	-	-	-	-	-	-
54	50	Water transport services.....	-	-	-	-	-	-	-	-
55	51	Air transport services.....	-	-	-	-	-	-	-	-
56	52	Warehousing and support services for transportation.....	-	-	-	-	-	-	-	-
57	53	Postal and courier services.....	-	-	-	-	-	-	-	-
58	I	Accommodation and food services.....	-	-	-	-	-	-	-	-
59	J	Information and communication services.....	-	-	-	-	-	-	-	-
60	K	Financial and insurance services.....	-	-	-	-	-	-	-	-
61	L	Real estate services.....	-	-	-	-	-	-	-	-
62	M	Professional, scientific and technical services.....	-	-	-	-	-	-	-	-
63	N	Administrative and support services.....	-	-	-	-	-	-	-	-
64	O	Public administration and defence services.....	-	-	-	-	-	-	-	-
65	P	Education services.....	-	-	-	-	-	-	-	-
66	Q	Human health and social work services.....	-	-	-	-	-	-	-	-
67	R-T	Other services.....	271	301	352	376	382	397	434	473
68		All homogeneous branches.....	245,220	221,476	202,690	214,507	207,154	209,225	211,741	215,382
69		Private households.....	618	507	481	498	504	497	440	445
70		All homogeneous branches and private households	245,837	221,982	203,171	215,005	207,659	209,722	212,181	215,826

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

Table 4.11.4: Direct NO_x emissions of road transport
tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	6,541	5,332	3,655	3,596	3,520	3,475	3,318	3,036
2	01	Products of agriculture, hunting and related services.....	5,943	4,844	3,332	3,237	3,199	3,169	3,043	2,784
3	02	Products of forestry, logging and related services.....	532	433	287	328	295	282	253	232
4	03	Fish and other fishing products; aquaculture products.....	66	54	36	31	26	25	22	21
5	B	Mining and quarrying.....	2,111	1,759	1,241	1,077	1,116	1,082	989	880
6	05	Coal and lignite.....	598	499	353	233	230	205	187	166
7	06	Crude petroleum and natural gas.....	472	393	277	264	288	283	259	230
8	07-09	Metal ores, other mining and quarrying products.....	1,041	867	611	580	599	594	544	484
9	C	Manufactured products.....	43,132	35,425	25,426	24,636	24,505	23,333	21,391	18,860
10	10-12	Food products, beverages, tobacco products.....	4,534	3,716	2,664	2,439	2,569	2,464	2,274	2,005
11	13-15	Textiles, wearing apparel, leather and related products.....	565	464	333	316	294	280	258	227
12	16	Wood and products of wood and cork, except furniture.....	608	498	357	321	331	318	294	259
13	17	Paper and paper products.....	996	818	587	533	526	499	461	406
14	18	Printing and recording services.....	586	481	345	299	296	278	257	226
15	19	Coke and refined petroleum products.....	1,469	1,205	867	921	1,044	982	906	799
16	19.1	Coke oven products.....	9	7	5	6	5	5	5	4
17	19.2	Refined petroleum products.....	1,460	1,198	861	915	1,039	977	901	795
18	20	Chemicals and chemical products.....	3,162	2,593	1,862	1,747	1,732	1,661	1,534	1,353
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	822	673	482	431	467	451	416	367
20	22	Rubber and plastic products.....	1,712	1,404	1,008	950	962	922	850	749
21	23	Other non-metallic mineral products.....	1,038	851	610	593	578	554	513	452
22	23.1	Glass and glass products.....	248	203	146	133	129	123	113	100
23	23.2-9	Refractory products, cut, shaped and finished stone.....	790	648	464	460	449	432	399	352
24	24	Basic metals.....	2,290	1,881	1,354	1,426	1,405	1,316	1,215	1,071
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	1,240	1,018	732	767	730	684	631	557
26	24.4	Basic precious and other non-ferrous metals.....	724	595	429	464	477	445	411	362
27	24.5	Casting services of metal.....	326	268	193	196	198	187	173	152
28	25	Fabricated metal products, except machinery and equipment.....	2,941	2,412	1,731	2,287	1,687	1,615	1,490	1,314
29	26	Computer, electronic and optical products.....	2,457	2,015	1,447	1,368	1,313	1,256	1,156	1,019
30	27	Electrical equipment.....	2,154	1,769	1,271	1,209	1,189	1,116	1,031	909
31	28	Machinery and equipment n.e.c.....	4,951	4,060	2,914	2,871	2,982	2,842	2,624	2,314
32	29	Motor vehicles, trailers and semi-trailers.....	9,079	7,497	5,380	4,841	5,008	4,751	4,245	3,743
33	30	Other transport equipment.....	1,743	1,429	1,025	953	988	950	877	773
34	31-32	Furniture, other manufacture goods.....	932	765	549	505	521	492	453	400
35	33	Repair and installation services of machinery and equipment.....	1,092	895	641	625	614	585	538	474
36	D (35)	Electricity, gas, steam and air conditioning.....	4,758	3,546	2,543	2,122	2,178	2,199	2,188	2,143
37	35.1/.3	Electricity, transmission and distribution services, steam.....	4,346	3,239	2,318	1,882	1,936	1,956	1,825	1,787
38	35.2	Manufactured gas.....	412	307	225	240	242	243	363	355
39	E	Water supply; sewerage, waste management and remediation services.....	68,049	58,506	38,399	35,049	31,350	29,503	26,068	22,630
40	36	Natural water; water treatment and supply services.....	1,355	1,143	774	676	604	596	549	492
41	37-39	Sewerage services; waste collection and materials recovery services.....	66,694	57,363	37,625	34,373	30,747	28,907	25,519	22,138
42	37	Sewerage services, sewerage sludge.....	5,446	4,473	2,962	2,640	2,445	2,353	2,190	1,996
43	38-39	Waste collection, treatment and disposal services.....	61,249	52,890	34,663	31,733	28,302	26,554	23,329	20,142
44	F	Constructions and construction works.....	41,971	33,256	23,002	23,559	22,815	22,479	21,683	20,595
45	41-42	Building and building construction works.....	13,023	10,202	6,947	7,146	7,325	7,248	6,984	6,633
46	43	Specialised construction works.....	28,948	23,054	16,054	16,413	15,490	15,232	14,699	13,961
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	74,611	62,609	45,449	41,653	39,727	37,741	33,547	28,964
48	45	Wholesale and retail trade and repair services of motor vehicles.....	10,601	8,834	6,253	3,311	3,015	2,880	2,751	2,509
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	48,379	41,528	30,817	30,092	28,628	27,120	23,503	19,703
50	47	Retail trade services, except of motor vehicles and motorcycles.....	15,632	12,246	8,379	8,250	8,085	7,740	7,293	6,752
51	H	Transportation and storage services.....	141,742	122,579	89,845	85,401	80,742	79,396	69,036	58,768
52	49.1-2	Passenger rail transport services, freight rail transport services.....	705	609	435	405	254	242	136	116
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	82,925	71,700	52,241	50,972	48,561	46,124	41,876	35,648
54	50	Water transport services.....	478	413	295	278	262	250	1,361	1,159
55	51	Air transport services.....	492	426	304	288	273	257	144	123
56	52	Warehousing and support services for transportation.....	39,972	34,603	25,828	24,580	23,174	23,404	13,077	11,132
57	53	Postal and courier services.....	17,170	14,828	10,742	8,878	8,219	9,119	12,442	10,591
58	I	Accommodation and food services.....	1,463	1,127	790	803	823	802	797	788
59	J	Information and communication services.....	19,600	16,394	10,632	12,136	11,112	10,505	9,463	8,400
60	K	Financial and insurance services.....	1,524	1,283	975	1,025	1,057	999	956	860
61	L	Real estate services.....	5,398	4,224	2,819	2,679	2,638	2,558	2,566	2,507
62	M	Professional, scientific and technical services.....	48,614	38,050	24,499	22,530	21,437	20,216	19,453	18,429
63	N	Administrative and support services.....	2,883	2,250	1,763	1,862	1,958	1,926	1,854	1,633
64	O	Public administration and defence services.....	19,411	15,960	11,087	10,296	10,057	9,669	9,385	8,867
65	P	Education services.....	1,086	901	636	613	606	571	545	515
66	Q	Human health and social work services.....	3,671	2,998	2,256	2,301	2,379	2,291	2,290	2,253
67	R-T	Other services.....	34,282	27,508	17,762	16,177	15,023	14,126	13,210	12,199
68		All homogeneous branches.....	520,847	433,706	302,779	287,513	273,045	262,870	238,738	212,327
69		Private households.....	492,500	366,855	243,128	233,039	228,368	225,027	223,438	222,367
70		All homogeneous branches and private households (residents concept).....	1,013,346	800,561	545,907	520,552	501,414	487,897	462,176	434,694
71		Transitional balance 2.....	20,883	-62,476	-43,792	-42,193	-38,414	-32,868	-30,081	-31,155
72		Total emissions (domestic concept).....	1,034,229	738,085	502,115	478,359	463,000	455,029	432,095	403,539

¹ Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

² Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.12.1: Direct NMVOC emissions
tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	247,807	228,781	218,508	215,670	213,935	217,864	220,129	217,421
2	01	Products of agriculture, hunting and related services.....	231,318	213,162	210,080	209,149	212,422	216,637	218,833	216,185
3	02	Products of forestry, logging and related services.....	16,455	15,588	8,400	6,494	1,487	1,202	1,268	1,212
4	03	Fish and other fishing products; aquaculture products.....	34	31	29	27	26	25	27	24
5	B	Mining and quarrying.....	2,568	1,601	1,128	1,175	1,068	1,102	1,142	1,127
6	05	Coal and lignite.....	1,372	929	827	860	790	812	853	856
7	06	Crude petroleum and natural gas.....	1,087	570	211	242	217	226	237	195
8	07-09	Metal ores, other mining and quarrying products.....	110	103	89	74	61	64	52	76
9	C	Manufactured products.....	508,743	665,514	600,781	559,096	558,535	533,572	476,746	485,814
10	10-12	Food products, beverages, tobacco products.....	14,429	14,732	14,337	15,292	15,711	14,971	15,392	15,033
11	13-15	Textiles, wearing apparel, leather and related products.....	109	95	44	41	40	41	37	36
12	16	Wood and products of wood and cork, except furniture.....	8,644	9,431	8,554	9,353	7,767	8,500	9,112	8,866
13	17	Paper and paper products.....	1,995	3,081	4,167	4,263	4,286	4,346	4,458	4,482
14	18	Printing and recording services.....	69	102,497	98,908	82,521	78,919	75,410	68,831	63,930
15	19	Coke and refined petroleum products.....	62,305	49,467	47,910	45,056	46,352	44,229	43,496	43,884
16	19.1	Coke oven products.....	14	0	0	0	0	0	0	0
17	19.2	Refined petroleum products.....	62,292	49,467	47,910	45,056	46,352	44,229	43,496	43,884
18	20	Chemicals and chemical products.....	51,986	55,363	57,829	55,234	53,872	55,398	50,226	48,522
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	147	72	79	90	88	85	75	79
20	22	Rubber and plastic products.....	180	221	170	143	152	136	133	175
21	23	Other non-metallic mineral products.....	3,508	2,761	2,519	2,777	2,725	2,647	2,727	2,666
22	23.1	Glass and glass products.....	963	885	861	1,024	976	990	1,037	1,022
23	23.2-9	Refractory products, cut, shaped and finished stone.....	2,544	1,876	1,659	1,753	1,749	1,657	1,690	1,644
24	24	Basic metals.....	5,767	5,784	5,379	5,545	5,284	5,253	5,294	5,370
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	4,447	4,343	4,102	4,079	3,896	3,908	3,949	4,035
26	24.4	Basic precious and other non-ferrous metals.....	191	198	155	151	149	146	153	149
27	24.5	Casting services of metal.....	1,129	1,242	1,122	1,316	1,238	1,198	1,192	1,186
28	25	Fabricated metal products, except machinery and equipment.....	43,519	118,859	114,013	101,840	97,185	98,259	89,997	92,319
29	26	Computer, electronic and optical products.....	178	129	81	77	75	72	65	59
30	27	Electrical equipment.....	170	120	85	74	70	63	60	58
31	28	Machinery and equipment n.e.c.....	437	333	254	239	236	222	200	181
32	29	Motor vehicles, trailers and semi-trailers.....	314,575	301,998	245,951	236,062	245,284	223,460	186,197	199,718
33	30	Other transport equipment.....	123	91	66	53	53	53	48	46
34	31-32	Furniture, other manufacture goods.....	537	432	397	397	400	393	365	360
35	33	Repair and installation services of machinery and equipment.....	65	47	39	38	36	34	33	30
36	D (35)	Electricity, gas, steam and air conditioning.....	9,497	11,858	13,934	14,228	12,607	12,727	12,455	12,293
37	35.1/.3	Electricity, transmission and distribution services, steam.....	9,480	11,845	13,920	14,212	12,580	12,547	12,250	12,088
38	35.2	Manufactured gas.....	18	13	15	16	27	180	205	205
39	E	Water supply; sewerage, waste management and remediation services.....	3,871	2,820	1,441	1,251	1,048	965	832	735
40	36	Natural water; water treatment and supply services.....	70	53	28	23	19	18	16	14
41	37-39	Sewerage services; waste collection and materials recovery services.....	3,801	2,767	1,413	1,228	1,029	947	817	721
42	37	Sewerage services, sewerage sludge.....	324	237	129	110	96	89	81	73
43	38-39	Waste collection, treatment and disposal services.....	3,477	2,529	1,285	1,118	933	858	736	648
44	F	Constructions and construction works.....	10,865	7,785	5,325	5,149	3,612	3,491	3,408	3,286
45	41-42	Building and building construction works.....	5,008	3,596	2,493	2,411	1,669	1,616	1,588	1,538
46	43	Specialised construction works.....	5,857	4,189	2,831	2,738	1,943	1,875	1,820	1,748
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	40,401	25,240	17,906	16,805	15,029	15,095	14,902	14,726
48	45	Wholesale and retail trade and repair services of motor vehicles.....	843	534	327	215	193	183	180	168
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	37,206	23,377	16,688	15,731	14,044	14,150	13,983	13,858
50	47	Retail trade services, except of motor vehicles and motorcycles.....	2,352	1,329	891	859	793	762	739	701
51	H	Transportation and storage services.....	27,821	53,301	62,189	54,010	61,267	64,166	60,765	62,204
52	49.1-2	Passenger rail transport services, freight rail transport services.....	2,334	1,229	886	944	687	645	567	529
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	9,575	9,398	8,062	7,944	7,780	8,124	7,858	7,763
54	50	Water transport services.....	8,601	36,008	48,377	40,497	48,105	50,518	47,726	49,370
55	51	Air transport services.....	4,931	4,834	3,830	3,749	3,930	4,120	3,998	3,977
56	52	Warehousing and support services for transportation.....	1,661	1,283	729	645	566	548	320	293
57	53	Postal and courier services.....	719	549	303	231	199	210	296	271
58	I	Accommodation and food services.....	604	327	276	274	261	258	269	249
59	J	Information and communication services.....	1,210	883	466	497	440	406	363	333
60	K	Financial and insurance services.....	217	131	83	79	79	78	73	72
61	L	Real estate services.....	419	288	173	162	159	152	148	143
62	M	Professional, scientific and technical services.....	3,791	2,647	1,543	1,395	1,305	1,227	1,167	1,107
63	N	Administrative and support services.....	216	150	107	107	106	103	103	99
64	O	Public administration and defence services.....	6,648	5,388	3,628	3,497	2,953	2,823	2,745	2,623
65	P	Education services.....	279	140	114	110	121	105	96	93
66	Q	Human health and social work services.....	1,162	536	408	406	400	368	371	375
67	R-T	Other services.....	2,115	2,556	2,022	1,947	1,884	1,810	1,761	1,724
68		All homogeneous branches.....	868,237	1,009,946	930,032	875,858	874,810	856,311	797,476	804,423
69		Private households.....	749,042	355,768	349,345	310,047	292,585	298,595	278,089	278,393
70		All homogeneous branches and private households (residents concept) 2.....	1,617,278	1,365,714	1,279,378	1,185,905	1,167,395	1,154,905	1,075,565	1,082,816
71		Transitional balance 3.....	-7,050	-41,314	-48,910	-40,781	-49,106	-50,969	-47,489	-52,260
72		Total emissions (domestic concept) 2.....	1,610,228	1,324,400	1,230,468	1,145,124	1,118,289	1,103,936	1,028,076	1,030,557

¹ Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

² Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

³ Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.12.2: Direct NMVOC emissions per unit energy consumption (not including road transport)
tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	29,248	25,347	17,098	14,807	9,646	9,034	8,948	8,824
2	01	Products of agriculture, hunting and related services.....	12,800	9,758	8,685	8,303	8,147	7,821	7,664	7,597
3	02	Products of forestry, logging and related services.....	16,419	15,562	8,385	6,478	1,474	1,190	1,258	1,203
4	03	Fish and other fishing products; aquaculture products.....	30	27	27	25	25	23	26	24
5	B	Mining and quarrying.....	116	187	119	140	51	58	50	78
6	05	Coal and lignite.....	13	25	24	77	3	5	4	5
7	06	Crude petroleum and natural gas.....	54	105	31	13	9	9	12	13
8	07-09	Metal ores, other mining and quarrying products.....	49	57	64	51	39	43	35	61
9	C	Manufactured products.....	5,783	5,912	6,361	6,567	5,567	5,572	6,135	6,089
10	10-12	Food products, beverages, tobacco products.....	544	466	564	441	459	413	502	397
11	13-15	Textiles, wearing apparel, leather and related products.....	75	71	29	28	28	30	27	26
12	16	Wood and products of wood and cork, except furniture.....	797	1,322	1,794	2,311	1,401	1,587	2,242	2,094
13	17	Paper and paper products.....	1,005	771	722	668	646	639	621	747
14	18	Printing and recording services.....	34	27	19	17	19	20	18	19
15	19	Coke and refined petroleum products.....	962	1,049	848	846	823	797	710	711
16	19.1	Coke oven products.....	13	0	0	0	0	0	0	0
17	19.2	Refined petroleum products.....	949	1,049	848	846	823	797	710	711
18	20	Chemicals and chemical products.....	603	447	738	684	632	583	575	560
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	98	36	58	72	69	68	59	64
20	22	Rubber and plastic products.....	79	148	126	102	113	100	99	143
21	23	Other non-metallic mineral products.....	274	420	299	340	319	286	298	279
22	23.1	Glass and glass products.....	127	97	79	125	77	73	93	93
23	23.2-9	Refractory products, cut, shaped and finished stone.....	147	322	220	215	241	213	205	186
24	24	Basic metals.....	316	306	306	241	230	233	242	300
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	152	124	154	92	81	84	99	147
26	24.4	Basic precious and other non-ferrous metals.....	148	167	137	131	130	129	136	134
27	24.5	Casting services of metal.....	16	16	16	18	18	20	7	19
28	25	Fabricated metal products, except machinery and equipment.....	185	161	195	172	174	179	169	189
29	26	Computer, electronic and optical products.....	33	24	17	19	22	23	19	17
30	27	Electrical equipment.....	43	27	29	24	23	20	19	20
31	28	Machinery and equipment n.e.c.....	143	121	127	118	117	111	96	84
32	29	Motor vehicles, trailers and semi-trailers.....	92	107	85	85	89	83	66	72
33	30	Other transport equipment.....	19	16	22	13	14	16	13	13
34	31-32	Furniture, other manufacture goods.....	481	392	373	376	379	374	347	343
35	33	Repair and installation services of machinery and equipment.....	0	0	11	12	11	11	11	11
36	D (35)	Electricity, gas, steam and air conditioning.....	9,292	11,711	13,840	14,153	12,533	12,654	12,385	12,224
37	35.1/.3	Electricity, transmission and distribution services, steam.....	9,292	11,711	13,834	14,145	12,514	12,482	12,192	12,031
38	35.2	Manufactured gas.....	0	0	6	7	18	172	193	193
39	E	Water supply; sewerage, waste management and remediation services.....	258	72	52	62	54	72	62	58
40	36	Natural water; water treatment and supply services.....	0	0	0	0	0	0	0	0
41	37-39	Sewerage services; waste collection and materials recovery services.....	258	72	52	62	53	72	62	58
42	37	Sewerage services, sewerage sludge.....	0	0	0	0	0	0	0	0
43	38-39	Waste collection, treatment and disposal services.....	258	72	52	62	53	72	62	58
44	F	Constructions and construction works.....	8,689	6,173	4,391	4,240	2,769	2,693	2,678	2,616
45	41-42	Building and building construction works.....	4,338	3,102	2,210	2,134	1,398	1,358	1,353	1,322
46	43	Specialised construction works.....	4,351	3,070	2,181	2,107	1,372	1,334	1,325	1,294
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	1,206	381	312	310	253	253	252	246
48	45	Wholesale and retail trade and repair services of motor vehicles.....	150	34	32	27	26	26	25	24
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	225	47	35	45	25	26	29	29
50	47	Retail trade services, except of motor vehicles and motorcycles.....	831	300	244	238	202	201	198	194
51	H	Transportation and storage services.....	15,823	42,046	53,087	45,185	52,724	55,293	52,278	53,868
52	49.1-2	Passenger rail transport services, freight rail transport services.....	2,305	1,207	873	934	681	640	564	526
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	0	7	5	6	6	8	8	8
54	50	Water transport services.....	8,582	35,993	48,369	40,490	48,099	50,513	47,694	49,341
55	51	Air transport services.....	4,911	4,819	3,822	3,741	3,924	4,114	3,994	3,974
56	52	Warehousing and support services for transportation.....	14	15	13	12	13	16	13	14
57	53	Postal and courier services.....	11	5	3	2	3	3	4	5
58	I	Accommodation and food services.....	434	213	202	201	189	189	200	184
59	J	Information and communication services.....	64	37	23	19	20	22	18	18
60	K	Financial and insurance services.....	83	38	24	19	20	23	19	18
61	L	Real estate services.....	17	8	5	4	4	4	3	3
62	M	Professional, scientific and technical services.....	125	89	79	73	75	79	73	73
63	N	Administrative and support services.....	17	12	13	11	11	12	14	15
64	O	Public administration and defence services.....	4,656	3,952	2,810	2,769	2,286	2,202	2,168	2,094
65	P	Education services.....	201	84	81	79	91	78	70	68
66	Q	Human health and social work services.....	587	152	153	146	135	113	110	113
67	R-T	Other services.....	147	78	68	82	94	72	69	68
68		All homogeneous branches.....	76,745	96,490	98,717	88,869	86,522	88,422	85,531	86,658
69		Private households.....	60,025	42,549	61,952	55,866	49,627	49,984	42,065	43,040
70		All homogeneous branches and private households (residents concept) 2.....	136,770	139,039	160,669	144,735	136,149	138,406	127,596	129,698
71		Transitional balance 3.....	1,084	-24,391	-34,849	-26,937	-35,750	-39,670	-36,879	-39,987
72		Total emissions (domestic concept) 2.....	137,853	114,648	125,820	117,798	100,399	98,737	90,718	89,711

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

3 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.12.3: Direct NMVOC processemissions
tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	218,116	203,109	201,227	200,692	204,130	208,678	211,044	208,479
2	01	Products of agriculture, hunting and related services.....	218,116	203,109	201,227	200,692	204,130	208,678	211,044	208,479
3	02	Products of forestry, logging and related services.....	-	-	-	-	-	-	-	-
4	03	Fish and other fishing products; aquaculture products.....	-	-	-	-	-	-	-	-
5	B	Mining and quarrying.....	2,330	1,322	957	992	977	1,007	1,060	1,021
6	05	Coal and lignite.....	1,324	878	789	774	779	800	844	846
7	06	Crude petroleum and natural gas.....	1,005	444	169	219	198	207	217	175
8	07-09	Metal ores, other mining and quarrying products.....	-	-	-	-	-	-	-	-
9	C	Manufactured products.....	500,413	657,756	593,317	551,491	551,985	527,089	469,761	478,935
10	10-12	Food products, beverages, tobacco products.....	13,616	14,072	13,656	14,748	15,148	14,461	14,800	14,552
11	13-15	Textiles, wearing apparel, leather and related products.....	-	-	-	-	-	-	-	-
12	16	Wood and products of wood and cork, except furniture.....	7,811	8,083	6,745	7,028	6,353	6,901	6,858	6,761
13	17	Paper and paper products.....	931	2,268	3,419	3,573	3,620	3,687	3,818	3,718
14	18	Printing and recording services.....	0	102,445	98,874	82,492	78,888	75,379	68,803	63,902
15	19	Coke and refined petroleum products.....	61,256	48,355	47,025	44,172	45,487	43,394	42,750	43,140
16	19.1	Coke oven products.....	-	-	-	-	-	-	-	-
17	19.2	Refined petroleum products.....	61,256	48,355	47,025	44,172	45,487	43,394	42,750	43,140
18	20	Chemicals and chemical products.....	51,195	54,780	57,009	54,476	53,170	54,750	49,590	47,906
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	-	-	-	-	-	-	-	-
20	22	Rubber and plastic products.....	-	-	-	-	-	-	-	-
21	23	Other non-metallic mineral products.....	3,172	2,297	2,194	2,412	2,384	2,339	2,408	2,367
22	23.1	Glass and glass products.....	822	777	775	894	894	912	939	924
23	23.2-9	Refractory products, cut, shaped and finished stone.....	2,350	1,520	1,419	1,519	1,490	1,427	1,469	1,443
24	24	Basic metals.....	5,316	5,379	5,014	5,245	4,998	4,968	5,004	5,025
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	4,222	4,167	3,917	3,955	3,786	3,797	3,825	3,865
26	24.4	Basic precious and other non-ferrous metals.....	-	-	-	-	-	-	-	-
27	24.5	Casting services of metal.....	1,094	1,213	1,097	1,289	1,212	1,171	1,179	1,160
28	25	Fabricated metal products, except machinery and equipment.....	43,160	118,572	113,743	101,572	96,944	98,017	89,769	92,076
29	26	Computer, electronic and optical products.....	-	-	-	-	-	-	-	-
30	27	Electrical equipment.....	-	-	-	-	-	-	-	-
31	28	Machinery and equipment n.e.c.....	-	-	-	-	-	-	-	-
32	29	Motor vehicles, trailers and semi-trailers.....	313,955	301,506	245,636	235,773	244,994	223,192	185,962	199,489
33	30	Other transport equipment.....	-	-	-	-	-	-	-	-
34	31-32	Furniture, other manufacture goods.....	-	-	-	-	-	-	-	-
35	33	Repair and installation services of machinery and equipment.....	-	-	-	-	-	-	-	-
36	D (35)	Electricity, gas, steam and air conditioning.....	-	-	-	-	-	-	-	-
37	35.1/.3	Electricity, transmission and distribution services, steam.....	-	-	-	-	-	-	-	-
38	35.2	Manufactured gas.....	-	-	-	-	-	-	-	-
39	E	Water supply; sewerage, waste management and remediation services.....	-	-	-	-	-	-	-	-
40	36	Natural water; water treatment and supply services.....	-	-	-	-	-	-	-	-
41	37-39	Sewerage services; waste collection and materials recovery services.....	-	-	-	-	-	-	-	-
42	37	Sewerage services, sewerage sludge.....	-	-	-	-	-	-	-	-
43	38-39	Waste collection, treatment and disposal services.....	-	-	-	-	-	-	-	-
44	F	Constructions and construction works.....	-	-	-	-	-	-	-	-
45	41-42	Building and building construction works.....	-	-	-	-	-	-	-	-
46	43	Specialised construction works.....	-	-	-	-	-	-	-	-
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	34,513	21,487	15,578	14,695	13,127	13,313	13,221	13,169
48	45	Wholesale and retail trade and repair services of motor vehicles.....	-	-	-	-	-	-	-	-
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	34,513	21,487	15,578	14,695	13,127	13,313	13,221	13,169
50	47	Retail trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
51	H	Transportation and storage services.....	6,158	6,763	6,606	6,621	6,608	7,066	6,867	6,860
52	49.1-2	Passenger rail transport services, freight rail transport services.....	-	-	-	-	-	-	-	-
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	6,158	6,763	6,606	6,621	6,608	7,066	6,867	6,860
54	50	Water transport services.....	-	-	-	-	-	-	-	-
55	51	Air transport services.....	-	-	-	-	-	-	-	-
56	52	Warehousing and support services for transportation.....	-	-	-	-	-	-	-	-
57	53	Postal and courier services.....	-	-	-	-	-	-	-	-
58	I	Accommodation and food services.....	-	-	-	-	-	-	-	-
59	J	Information and communication services.....	-	-	-	-	-	-	-	-
60	K	Financial and insurance services.....	-	-	-	-	-	-	-	-
61	L	Real estate services.....	-	-	-	-	-	-	-	-
62	M	Professional, scientific and technical services.....	-	-	-	-	-	-	-	-
63	N	Administrative and support services.....	-	-	-	-	-	-	-	-
64	O	Public administration and defence services.....	-	-	-	-	-	-	-	-
65	P	Education services.....	-	-	-	-	-	-	-	-
66	Q	Human health and social work services.....	-	-	-	-	-	-	-	-
67	R-T	Other services.....	4	1,041	1,179	1,188	1,188	1,189	1,189	1,190
68		All homogeneous branches.....	761,534	891,478	818,864	775,679	778,014	758,341	703,143	709,654
69		Private households.....	419,907	143,722	176,889	146,649	142,332	151,681	140,358	142,425
70		All homogeneous branches and private households.....	1,181,441	1,035,199	995,753	922,328	920,346	910,022	843,501	852,079

¹ Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

Table 4.12.4: Direct NMVOC emissions of road transport
tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	444	326	184	172	159	151	136	118
2	01	Products of agriculture, hunting and related services.....	403	296	167	155	145	138	125	108
3	02	Products of forestry, logging and related services.....	36	26	14	16	13	12	10	9
4	03	Fish and other fishing products; aquaculture products.....	4	3	2	1	1	1	1	1
5	B	Mining and quarrying.....	123	93	51	42	40	37	32	28
6	05	Coal and lignite.....	35	26	15	9	8	7	6	5
7	06	Crude petroleum and natural gas.....	27	21	11	10	10	10	8	7
8	07-09	Metal ores, other mining and quarrying products.....	61	46	25	23	22	20	18	15
9	C	Manufactured products.....	2,547	1,846	1,104	1,038	983	911	851	790
10	10-12	Food products, beverages, tobacco products.....	269	195	117	103	103	96	90	84
11	13-15	Textiles, wearing apparel, leather and related products.....	33	24	15	13	12	11	10	10
12	16	Wood and products of wood and cork, except furniture.....	36	26	16	14	13	12	12	11
13	17	Paper and paper products.....	59	43	26	22	21	19	18	17
14	18	Printing and recording services.....	35	25	15	13	12	11	10	9
15	19	Coke and refined petroleum products.....	87	63	38	39	42	38	36	33
16	19.1	Coke oven products.....	1	0	0	0	0	0	0	0
17	19.2	Refined petroleum products.....	86	63	38	39	42	38	36	33
18	20	Chemicals and chemical products.....	187	136	81	74	70	65	61	57
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	49	35	21	18	19	18	17	15
20	22	Rubber and plastic products.....	102	73	44	40	39	36	34	31
21	23	Other non-metallic mineral products.....	62	45	27	25	23	22	20	19
22	23.1	Glass and glass products.....	15	11	6	6	5	5	5	4
23	23.2-9	Refractory products, cut, shaped and finished stone.....	47	34	20	19	18	17	16	15
24	24	Basic metals.....	135	98	59	60	56	51	48	45
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	73	53	32	32	29	27	25	23
26	24.4	Basic precious and other non-ferrous metals.....	43	31	19	19	19	17	16	15
27	24.5	Casting services of metal.....	19	14	8	8	8	7	7	6
28	25	Fabricated metal products, except machinery and equipment.....	174	126	76	96	68	63	59	55
29	26	Computer, electronic and optical products.....	146	105	63	58	53	49	46	43
30	27	Electrical equipment.....	127	92	55	51	48	44	41	38
31	28	Machinery and equipment n.e.c.....	294	212	127	121	120	111	104	97
32	29	Motor vehicles, trailers and semi-trailers.....	529	385	229	204	201	185	169	157
33	30	Other transport equipment.....	103	75	45	40	40	37	35	32
34	31-32	Furniture, other manufacture goods.....	55	40	24	21	21	19	18	17
35	33	Repair and installation services of machinery and equipment.....	65	47	28	26	25	23	21	20
36	D (35)	Electricity, gas, steam and air conditioning.....	205	147	94	75	74	72	70	68
37	35.1/.3	Electricity, transmission and distribution services, steam.....	187	134	86	67	66	64	58	57
38	35.2	Manufactured gas.....	18	13	8	9	8	8	12	11
39	E	Water supply; sewerage, waste management and remediation services.....	3,613	2,748	1,389	1,188	995	893	770	677
40	36	Natural water; water treatment and supply services.....	70	53	28	23	19	18	16	14
41	37-39	Sewerage services; waste collection and materials recovery services.....	3,543	2,695	1,361	1,165	976	875	755	663
42	37	Sewerage services, sewerage sludge.....	324	237	129	110	96	89	81	73
43	38-39	Waste collection, treatment and disposal services.....	3,219	2,458	1,232	1,056	879	785	674	590
44	F	Constructions and construction works.....	2,177	1,613	934	909	843	798	729	670
45	41-42	Building and building construction works.....	670	494	284	278	272	257	235	216
46	43	Specialised construction works.....	1,506	1,119	650	631	571	541	495	454
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	4,682	3,372	2,016	1,800	1,650	1,530	1,428	1,311
48	45	Wholesale and retail trade and repair services of motor vehicles.....	693	501	295	188	167	157	154	144
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	2,468	1,843	1,075	991	892	812	732	660
50	47	Retail trade services, except of motor vehicles and motorcycles.....	1,521	1,029	646	621	591	561	541	507
51	H	Transportation and storage services.....	5,840	4,492	2,496	2,204	1,935	1,808	1,620	1,476
52	49.1-2	Passenger rail transport services, freight rail transport services.....	29	22	12	10	6	6	3	3
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	3,417	2,628	1,451	1,318	1,166	1,050	983	895
54	50	Water transport services.....	20	15	8	7	6	6	32	29
55	51	Air transport services.....	20	16	8	7	7	6	3	3
56	52	Warehousing and support services for transportation.....	1,647	1,267	716	633	554	533	307	279
57	53	Postal and courier services.....	708	544	300	229	196	208	292	266
58	I	Accommodation and food services.....	171	114	74	73	72	69	69	65
59	J	Information and communication services.....	1,146	846	444	477	420	384	345	315
60	K	Financial and insurance services.....	134	93	59	59	59	55	55	54
61	L	Real estate services.....	402	281	168	158	155	148	145	140
62	M	Professional, scientific and technical services.....	3,666	2,558	1,464	1,322	1,230	1,148	1,094	1,033
63	N	Administrative and support services.....	199	138	95	95	95	91	90	85
64	O	Public administration and defence services.....	1,992	1,436	818	728	667	621	577	529
65	P	Education services.....	78	56	33	31	29	27	26	25
66	Q	Human health and social work services.....	575	384	255	260	265	255	261	262
67	R-T	Other services.....	1,965	1,437	775	677	601	550	503	466
68		All homogeneous branches.....	29,958	21,979	12,451	11,310	10,273	9,547	8,801	8,111
69		Private households.....	269,109	169,497	110,505	107,532	100,627	96,930	95,666	92,929
70		All homogeneous branches and private households (residents concept).....	299,067	191,476	122,956	118,842	110,900	106,477	104,467	101,040
71		Transitional balance 2.....	-8,134	-16,923	-14,061	-13,844	-13,356	-11,300	-10,610	-12,273
72		Total emissions (domestic concept).....	290,934	174,553	108,895	104,998	97,544	95,177	93,857	88,767

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.13.1: Direct emissions of particulate matter (PM₁₀)

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	51,176	50,325	51,858	53,231	54,768	56,146	56,313	55,998
2	01	Products of agriculture, hunting and related services.....	50,610	49,856	51,596	52,989	54,616	55,999	56,163	55,860
3	02	Products of forestry, logging and related services.....	426	364	222	207	118	114	114	106
4	03	Fish and other fishing products; aquaculture products.....	140	106	40	35	34	32	36	33
5	B	Mining and quarrying.....	19,712	16,699	15,169	16,409	16,029	15,890	15,893	15,247
6	05	Coal and lignite.....	4,922	5,051	4,740	4,982	5,137	5,056	4,933	4,915
7	06	Crude petroleum and natural gas.....	22	20	13	12	12	11	11	9
8	07-09	Metal ores, other mining and quarrying products.....	14,768	11,628	10,415	11,415	10,880	10,823	10,949	10,323
9	C	Manufactured products.....	39,600	29,209	19,190	19,477	18,425	18,234	18,480	18,114
10	10-12	Food products, beverages, tobacco products.....	816	889	730	746	757	645	723	583
11	13-15	Textiles, wearing apparel, leather and related products.....	53	42	22	20	18	20	18	14
12	16	Wood and products of wood and cork, except furniture.....	1,879	2,498	2,021	2,240	1,787	1,878	2,170	2,080
13	17	Paper and paper products.....	664	679	602	514	486	473	448	477
14	18	Printing and recording services.....	3,295	3,296	2,408	2,364	2,370	2,376	2,388	2,415
15	19	Coke and refined petroleum products.....	1,886	1,890	1,164	1,147	1,033	1,004	849	822
16	19.1	Coke oven products.....	105	74	99	97	97	100	106	106
17	19.2	Refined petroleum products.....	1,781	1,816	1,065	1,050	936	904	743	715
18	20	Chemicals and chemical products.....	1,116	810	896	797	755	733	737	716
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	75	42	42	45	44	42	40	39
20	22	Rubber and plastic products.....	92	116	70	63	67	59	58	70
21	23	Other non-metallic mineral products.....	6,936	4,483	3,193	3,468	3,290	3,172	3,197	3,069
22	23.1	Glass and glass products.....	124	142	158	181	152	156	171	173
23	23.2-9	Refractory products, cut, shaped and finished stone.....	6,812	4,340	3,036	3,286	3,139	3,016	3,026	2,896
24	24	Basic metals.....	18,582	10,360	4,956	5,026	4,796	4,844	4,896	4,967
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	15,672	9,098	4,326	4,349	4,167	4,181	4,221	4,303
26	24.4	Basic precious and other non-ferrous metals.....	1,633	609	421	447	426	481	508	515
27	24.5	Casting services of metal.....	1,277	653	210	230	202	182	166	149
28	25	Fabricated metal products, except machinery and equipment.....	2,990	2,966	2,193	2,175	2,153	2,158	2,167	2,181
29	26	Computer, electronic and optical products.....	109	93	71	68	65	63	61	50
30	27	Electrical equipment.....	104	86	65	62	60	56	55	45
31	28	Machinery and equipment n.e.c.....	241	206	163	163	164	156	152	124
32	29	Motor vehicles, trailers and semi-trailers.....	381	345	252	245	250	235	220	183
33	30	Other transport equipment.....	74	64	51	47	48	46	45	37
34	31-32	Furniture, other manufacture goods.....	264	304	258	254	251	243	228	218
35	33	Repair and installation services of machinery and equipment.....	44	39	32	34	31	30	29	24
36	D (35)	Electricity, gas, steam and air conditioning.....	12,150	12,101	11,594	11,664	11,007	11,245	11,047	10,786
37	35.1/.3	Electricity, transmission and distribution services, steam.....	12,128	12,081	11,572	11,640	10,977	11,121	10,899	10,643
38	35.2	Manufactured gas.....	22	20	22	24	31	124	148	143
39	E	Water supply; sewerage, waste management and remediation services.....	2,478	2,048	1,201	1,079	897	847	768	644
40	36	Natural water; water treatment and supply services.....	53	45	28	24	20	19	18	15
41	37-39	Sewerage services; waste collection and materials recovery services.....	2,425	2,003	1,172	1,055	876	828	750	629
42	37	Sewerage services, sewerage sludge.....	244	212	145	130	119	113	109	90
43	38-39	Waste collection, treatment and disposal services.....	2,181	1,791	1,027	925	758	716	641	539
44	F	Constructions and construction works.....	23,113	16,037	12,834	12,141	12,403	14,981	13,945	12,204
45	41-42	Building and building construction works.....	19,436	13,564	10,932	10,211	10,580	13,202	12,151	10,614
46	43	Specialised construction works.....	3,677	2,473	1,902	1,930	1,824	1,778	1,793	1,590
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	3,175	2,548	1,799	1,678	1,532	1,438	1,391	1,154
48	45	Wholesale and retail trade and repair services of motor vehicles.....	484	386	277	201	184	177	180	150
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	1,697	1,389	904	863	770	700	647	531
50	47	Retail trade services, except of motor vehicles and motorcycles.....	994	773	618	615	579	561	563	473
51	H	Transportation and storage services.....	87,542	219,654	134,693	123,500	136,509	139,685	134,784	136,355
52	49.1-2	Passenger rail transport services, freight rail transport services.....	4,737	3,383	3,294	3,321	3,120	3,084	3,028	2,998
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	35,428	27,702	34,797	38,610	36,733	37,312	38,264	38,103
54	50	Water transport services.....	44,218	185,466	94,080	79,233	94,284	96,889	91,283	93,161
55	51	Air transport services.....	1,370	1,611	1,596	1,556	1,688	1,703	1,651	1,633
56	52	Warehousing and support services for transportation.....	1,246	1,039	643	574	505	502	288	237
57	53	Postal and courier services.....	543	452	283	207	179	194	271	223
58	I	Accommodation and food services.....	183	118	97	98	91	89	103	84
59	J	Information and communication services.....	792	676	430	474	437	409	384	313
60	K	Financial and insurance services.....	61	41	27	25	26	26	25	23
61	L	Real estate services.....	296	261	206	205	211	207	211	176
62	M	Professional, scientific and technical services.....	2,652	2,361	1,777	1,684	1,631	1,575	1,570	1,290
63	N	Administrative and support services.....	121	108	97	101	103	101	100	82
64	O	Public administration and defence services.....	1,637	1,477	1,001	938	810	669	699	620
65	P	Education services.....	112	73	61	61	68	58	55	50
66	Q	Human health and social work services.....	317	196	175	177	172	152	154	142
67	R-T	Other services.....	1,788	1,563	1,130	1,065	1,005	948	933	771
68		All homogeneous branches.....	246,905	355,495	253,337	244,010	256,124	262,699	256,854	254,053
69		Private households.....	74,008	67,176	69,093	63,401	59,813	59,769	54,033	56,730
70		All homogeneous branches and private households (residents concept) 2.....	320,913	422,671	322,430	307,411	315,937	322,468	310,887	310,783
71		Transitional balance 3.....	19,883	-114,257	-64,416	-49,541	-66,209	-71,262	-66,077	-72,113
72		Total emissions (domestic concept) 2.....	340,796	308,414	258,014	257,869	249,729	251,206	244,810	238,670

¹ Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).² Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.³ Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.13.2: Direct emissions of particulate matter (PM₁₀) per unit energy consumption (not including road transport)

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	10,581	8,237	6,860	6,511	6,283	6,035	5,894	5,813
2	01	Products of agriculture, hunting and related services.....	10,049	7,797	6,619	6,293	6,152	5,908	5,763	5,690
3	02	Products of forestry, logging and related services.....	396	337	203	185	99	97	96	91
4	03	Fish and other fishing products; aquaculture products.....	136	103	38	33	32	31	35	32
5	B	Mining and quarrying.....	64	73	47	83	21	30	18	29
6	05	Coal and lignite.....	19	26	16	55	2	7	5	5
7	06	Crude petroleum and natural gas.....	1	1	0	0	0	0	0	0
8	07-09	Metal ores, other mining and quarrying products.....	44	46	31	27	19	23	13	24
9	C	Manufactured products.....	3,620	4,439	3,467	3,424	2,857	2,826	3,017	2,960
10	10-12	Food products, beverages, tobacco products.....	152	279	223	164	167	140	188	133
11	13-15	Textiles, wearing apparel, leather and related products.....	30	22	7	5	5	7	5	4
12	16	Wood and products of wood and cork, except furniture.....	397	957	951	1,188	748	826	1,129	1,051
13	17	Paper and paper products.....	614	628	557	471	443	431	406	440
14	18	Printing and recording services.....	8	5	2	2	2	2	2	2
15	19	Coke and refined petroleum products.....	1,384	1,475	843	787	728	703	559	542
16	19.1	Coke oven products.....	104	74	99	96	97	100	106	106
17	19.2	Refined petroleum products.....	1,279	1,402	745	691	631	603	453	436
18	20	Chemicals and chemical products.....	352	221	382	292	261	242	244	236
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	42	13	20	25	22	21	19	22
20	22	Rubber and plastic products.....	22	55	23	18	23	16	16	36
21	23	Other non-metallic mineral products.....	136	273	109	138	128	117	152	144
22	23.1	Glass and glass products.....	5	25	4	27	3	3	12	16
23	23.2-9	Refractory products, cut, shaped and finished stone.....	131	249	106	111	125	114	140	128
24	24	Basic metals.....	129	134	21	21	18	19	18	78
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	117	119	10	7	7	6	6	65
26	24.4	Basic precious and other non-ferrous metals.....	8	12	10	10	8	9	10	11
27	24.5	Casting services of metal.....	4	3	2	3	3	4	1	2
28	25	Fabricated metal products, except machinery and equipment.....	41	27	37	28	29	32	31	35
29	26	Computer, electronic and optical products.....	9	6	4	3	4	4	3	3
30	27	Electrical equipment.....	17	9	6	5	5	4	4	3
31	28	Machinery and equipment n.e.c.....	40	30	28	27	25	23	22	18
32	29	Motor vehicles, trailers and semi-trailers.....	21	32	16	16	18	13	9	11
33	30	Other transport equipment.....	3	2	3	1	2	2	2	2
34	31-32	Furniture, other manufacture goods.....	226	271	232	230	227	220	206	200
35	33	Repair and installation services of machinery and equipment.....	0	0	2	4	2	2	2	2
36	D (35)	Electricity, gas, steam and air conditioning.....	11,893	11,868	11,385	11,492	10,831	11,069	10,865	10,636
37	35.1/.3	Electricity, transmission and distribution services, steam.....	11,893	11,868	11,381	11,488	10,820	10,964	10,747	10,518
38	35.2	Manufactured gas.....	0	0	4	4	11	105	118	118
39	E	Water supply; sewerage, waste management and remediation services.....	68	25	51	63	35	71	54	53
40	36	Natural water; water treatment and supply services.....	0	0	0	0	0	0	0	0
41	37-39	Sewerage services; waste collection and materials recovery services.....	68	25	51	63	35	71	54	53
42	37	Sewerage services, sewerage sludge.....	0	0	0	0	0	0	0	0
43	38-39	Waste collection, treatment and disposal services.....	68	25	51	63	35	71	54	53
44	F	Constructions and construction works.....	4,135	2,105	1,485	1,489	1,325	1,282	1,250	1,215
45	41-42	Building and building construction works.....	2,067	1,051	740	741	659	637	622	605
46	43	Specialised construction works.....	2,068	1,054	745	747	666	645	628	611
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	350	124	97	101	64	61	63	60
48	45	Wholesale and retail trade and repair services of motor vehicles.....	53	15	14	12	11	10	10	9
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	68	20	16	23	11	10	11	11
50	47	Retail trade services, except of motor vehicles and motorcycles.....	229	90	66	66	43	41	41	39
51	H	Transportation and storage services.....	42,887	184,226	92,761	77,716	92,855	95,365	89,893	91,759
52	49.1-2	Passenger rail transport services, freight rail transport services.....	1,264	498	369	398	328	304	285	270
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	0	10	8	8	8	10	9	9
54	50	Water transport services.....	40,258	182,111	90,791	75,757	90,832	93,347	87,946	89,844
55	51	Air transport services.....	1,354	1,598	1,588	1,549	1,681	1,697	1,648	1,631
56	52	Warehousing and support services for transportation.....	7	7	5	4	5	6	5	5
57	53	Postal and courier services.....	4	2	1	1	1	1	1	1
58	I	Accommodation and food services.....	103	46	37	37	30	29	39	29
59	J	Information and communication services.....	26	17	8	6	7	8	6	6
60	K	Financial and insurance services.....	33	17	8	6	7	8	6	6
61	L	Real estate services.....	7	3	2	1	1	1	1	1
62	M	Professional, scientific and technical services.....	34	23	13	11	12	13	10	10
63	N	Administrative and support services.....	7	5	5	4	4	4	5	5
64	O	Public administration and defence services.....	618	596	403	387	300	189	213	199
65	P	Education services.....	66	33	33	33	41	32	29	28
66	Q	Human health and social work services.....	161	60	70	69	61	45	45	46
67	R-T	Other services.....	56	33	30	41	48	33	32	32
68		All homogeneous branches.....	74,709	211,932	116,761	101,475	114,784	117,100	111,441	112,887
69		Private households.....	22,476	21,559	30,549	25,412	22,270	23,342	18,317	19,439
70		All homogeneous branches and private households (residents concept) 2.....	97,185	233,491	147,310	126,887	137,054	140,442	129,758	132,326
71		Transitional balance 3.....	18,706	-112,113	-63,140	-48,359	-65,202	-70,451	-65,371	-71,407
72		Total emissions (domestic concept) 2.....	115,892	121,378	84,170	78,528	71,852	69,991	64,387	60,919

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

3 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.13.3: Direct process emissions of particulate matter (PM₁₀)

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	40,221	41,761	44,760	46,485	48,261	49,892	50,191	49,992
2	01	Products of agriculture, hunting and related services.....	40,221	41,761	44,760	46,485	48,261	49,892	50,191	49,992
3	02	Products of forestry, logging and related services.....	-	-	-	-	-	-	-	-
4	03	Fish and other fishing products; aquaculture products.....	-	-	-	-	-	-	-	-
5	B	Mining and quarrying.....	19,552	16,542	15,065	16,277	15,962	15,817	15,835	15,184
6	05	Coal and lignite.....	4,875	5,002	4,709	4,916	5,125	5,041	4,921	4,904
7	06	Crude petroleum and natural gas.....	-	-	-	-	-	-	-	-
8	07-09	Metal ores, other mining and quarrying products.....	14,676	11,541	10,356	11,361	10,836	10,776	10,914	10,280
9	C	Manufactured products.....	34,236	23,244	14,556	14,889	14,429	14,322	14,402	14,288
10	10-12	Food products, beverages, tobacco products.....	479	448	383	467	470	391	423	358
11	13-15	Textiles, wearing apparel, leather and related products.....	-	-	-	-	-	-	-	-
12	16	Wood and products of wood and cork, except furniture.....	1,458	1,519	1,054	1,037	1,023	1,037	1,027	1,017
13	17	Paper and paper products.....	10	16	17	18	18	19	19	19
14	18	Printing and recording services.....	3,263	3,270	2,390	2,348	2,354	2,361	2,374	2,402
15	19	Coke and refined petroleum products.....	443	362	281	316	257	256	245	243
16	19.1	Coke oven products.....	-	-	-	-	-	-	-	-
17	19.2	Refined petroleum products.....	443	362	281	316	257	256	245	243
18	20	Chemicals and chemical products.....	636	476	427	423	413	414	417	418
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	-	-	-	-	-	-	-	-
20	22	Rubber and plastic products.....	-	-	-	-	-	-	-	-
21	23	Other non-metallic mineral products.....	6,758	4,172	3,056	3,302	3,135	3,030	3,019	2,904
22	23.1	Glass and glass products.....	109	109	147	148	142	148	153	152
23	23.2-9	Refractory products, cut, shaped and finished stone.....	6,649	4,064	2,908	3,154	2,993	2,882	2,866	2,751
24	24	Basic metals.....	18,361	10,145	4,873	4,938	4,714	4,764	4,818	4,840
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	15,505	8,935	4,283	4,306	4,127	4,143	4,183	4,213
26	24.4	Basic precious and other non-ferrous metals.....	1,596	571	391	415	397	451	478	487
27	24.5	Casting services of metal.....	1,260	639	199	218	190	169	156	140
28	25	Fabricated metal products, except machinery and equipment.....	2,829	2,835	2,076	2,040	2,045	2,051	2,062	2,086
29	26	Computer, electronic and optical products.....	-	-	-	-	-	-	-	-
30	27	Electrical equipment.....	-	-	-	-	-	-	-	-
31	28	Machinery and equipment n.e.c.....	-	-	-	-	-	-	-	-
32	29	Motor vehicles, trailers and semi-trailers.....	-	-	-	-	-	-	-	-
33	30	Other transport equipment.....	-	-	-	-	-	-	-	-
34	31-32	Furniture, other manufacture goods.....	-	-	-	-	-	-	-	-
35	33	Repair and installation services of machinery and equipment.....	-	-	-	-	-	-	-	-
36	D (35)	Electricity, gas, steam and air conditioning.....	-	-	-	-	-	-	-	-
37	35.1/.3	Electricity, transmission and distribution services, steam.....	-	-	-	-	-	-	-	-
38	35.2	Manufactured gas.....	-	-	-	-	-	-	-	-
39	E	Water supply; sewerage, waste management and remediation services.....	-	-	-	-	-	-	-	-
40	36	Natural water; water treatment and supply services.....	-	-	-	-	-	-	-	-
41	37-39	Sewerage services; waste collection and materials recovery services.....	-	-	-	-	-	-	-	-
42	37	Sewerage services, sewerage sludge.....	-	-	-	-	-	-	-	-
43	38-39	Waste collection, treatment and disposal services.....	-	-	-	-	-	-	-	-
44	F	Constructions and construction works.....	16,619	11,845	9,666	8,928	9,357	12,025	10,976	9,544
45	41-42	Building and building construction works.....	16,619	11,845	9,666	8,928	9,357	12,025	10,976	9,544
46	43	Specialised construction works.....	-	-	-	-	-	-	-	-
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	-	-	-	-	-	-	-	-
48	45	Wholesale and retail trade and repair services of motor vehicles.....	-	-	-	-	-	-	-	-
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
50	47	Retail trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
51	H	Transportation and storage services.....	40,239	31,744	39,678	43,765	41,867	42,635	43,397	43,369
52	49.1-2	Passenger rail transport services, freight rail transport services.....	3,451	2,867	2,914	2,914	2,786	2,774	2,740	2,726
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	32,842	25,535	33,482	37,382	35,634	36,324	37,349	37,349
54	50	Water transport services.....	3,946	3,342	3,282	3,469	3,447	3,537	3,308	3,293
55	51	Air transport services.....	-	-	-	-	-	-	-	-
56	52	Warehousing and support services for transportation.....	-	-	-	-	-	-	-	-
57	53	Postal and courier services.....	-	-	-	-	-	-	-	-
58	I	Accommodation and food services.....	-	-	-	-	-	-	-	-
59	J	Information and communication services.....	-	-	-	-	-	-	-	-
60	K	Financial and insurance services.....	-	-	-	-	-	-	-	-
61	L	Real estate services.....	-	-	-	-	-	-	-	-
62	M	Professional, scientific and technical services.....	-	-	-	-	-	-	-	-
63	N	Administrative and support services.....	-	-	-	-	-	-	-	-
64	O	Public administration and defence services.....	-	-	-	-	-	-	-	-
65	P	Education services.....	-	-	-	-	-	-	-	-
66	Q	Human health and social work services.....	-	-	-	-	-	-	-	-
67	R-T	Other services.....	7	7	9	9	9	10	11	11
68		All homogeneous branches.....	150,873	125,144	123,733	130,353	129,885	134,701	134,812	132,388
69		Private households.....	19,417	16,873	15,666	15,493	16,024	15,419	15,272	15,781
70		All homogeneous branches and private households.....	170,291	142,017	139,399	145,846	145,908	150,120	150,084	148,168

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

Table 4.13.4: Direct emissions of particulate matter (PM₁₀) of road transport
tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	374	328	238	235	224	219	227	194
2	01	Products of agriculture, hunting and related services.....	340	298	217	212	203	200	208	178
3	02	Products of forestry, logging and related services.....	30	27	19	21	19	18	17	15
4	03	Fish and other fishing products; aquaculture products.....	4	3	2	2	2	2	2	1
5	B	Mining and quarrying.....	96	83	57	49	46	43	41	33
6	05	Coal and lignite.....	27	23	16	10	9	8	8	6
7	06	Crude petroleum and natural gas.....	22	19	13	12	12	11	11	9
8	07-09	Metal ores, other mining and quarrying products.....	48	41	28	27	25	24	22	18
9	C	Manufactured products.....	1,744	1,525	1,167	1,164	1,138	1,087	1,060	866
10	10-12	Food products, beverages, tobacco products.....	185	162	124	116	120	115	113	92
11	13-15	Textiles, wearing apparel, leather and related products.....	23	20	15	15	14	13	13	10
12	16	Wood and products of wood and cork, except furniture.....	25	22	17	15	15	15	15	12
13	17	Paper and paper products.....	40	35	27	25	24	23	23	19
14	18	Printing and recording services.....	24	21	16	14	14	13	13	10
15	19	Coke and refined petroleum products.....	59	52	40	43	48	46	45	37
16	19.1	Coke oven products.....	0	0	0	0	0	0	0	0
17	19.2	Refined petroleum products.....	59	52	40	43	48	45	45	37
18	20	Chemicals and chemical products.....	129	113	87	83	81	77	76	62
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	34	29	23	21	22	21	21	17
20	22	Rubber and plastic products.....	70	61	47	45	45	43	42	34
21	23	Other non-metallic mineral products.....	42	37	28	28	27	26	25	21
22	23.1	Glass and glass products.....	10	9	7	6	6	6	6	5
23	23.2-9	Refractory products, cut, shaped and finished stone.....	32	28	22	22	21	20	20	16
24	24	Basic metals.....	93	81	62	67	65	61	60	49
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	50	44	34	36	34	32	31	26
26	24.4	Basic precious and other non-ferrous metals.....	29	26	20	22	22	21	20	17
27	24.5	Casting services of metal.....	13	12	9	9	9	9	9	7
28	25	Fabricated metal products, except machinery and equipment.....	120	105	80	107	79	75	74	60
29	26	Computer, electronic and optical products.....	100	87	67	65	61	59	57	47
30	27	Electrical equipment.....	87	76	58	57	55	52	51	42
31	28	Machinery and equipment n.e.c.....	201	176	135	136	139	132	130	106
32	29	Motor vehicles, trailers and semi-trailers.....	360	314	236	228	232	221	210	172
33	30	Other transport equipment.....	71	62	48	45	46	44	43	36
34	31-32	Furniture, other manufacture goods.....	38	33	25	24	24	23	22	18
35	33	Repair and installation services of machinery and equipment.....	44	39	30	30	29	27	27	22
36	D (35)	Electricity, gas, steam and air conditioning.....	257	233	209	171	176	176	182	150
37	35.1/.3	Electricity, transmission and distribution services, steam.....	235	213	191	152	156	152	152	125
38	35.2	Manufactured gas.....	22	20	18	19	19	19	30	25
39	E	Water supply; sewerage, waste management and remediation services.....	2,410	2,023	1,150	1,017	862	777	714	591
40	36	Natural water; water treatment and supply services.....	53	45	28	24	20	19	18	15
41	37-39	Sewerage services; waste collection and materials recovery services.....	2,357	1,977	1,121	992	842	758	696	576
42	37	Sewerage services, sewerage sludge.....	244	212	145	130	119	113	109	90
43	38-39	Waste collection, treatment and disposal services.....	2,113	1,765	976	862	723	645	587	486
44	F	Constructions and construction works.....	2,359	2,087	1,682	1,724	1,721	1,673	1,718	1,445
45	41-42	Building and building construction works.....	750	667	526	542	564	539	553	466
46	43	Specialised construction works.....	1,609	1,419	1,157	1,183	1,158	1,134	1,165	980
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	2,825	2,424	1,702	1,577	1,469	1,377	1,328	1,094
48	45	Wholesale and retail trade and repair services of motor vehicles.....	431	371	262	189	173	167	170	141
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	1,629	1,370	888	840	759	691	636	520
50	47	Retail trade services, except of motor vehicles and motorcycles.....	765	684	552	549	536	520	522	434
51	H	Transportation and storage services.....	4,415	3,684	2,253	2,019	1,787	1,685	1,494	1,227
52	49.1-2	Passenger rail transport services, freight rail transport services.....	22	18	11	10	6	5	3	2
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	2,586	2,158	1,307	1,220	1,091	979	906	744
54	50	Water transport services.....	15	12	7	7	6	5	29	24
55	51	Air transport services.....	15	13	8	7	6	5	3	3
56	52	Warehousing and support services for transportation.....	1,239	1,032	638	570	501	497	283	232
57	53	Postal and courier services.....	539	450	282	206	178	194	269	221
58	I	Accommodation and food services.....	80	72	60	61	61	60	63	55
59	J	Information and communication services.....	766	659	422	468	430	402	378	308
60	K	Financial and insurance services.....	27	24	18	19	19	18	18	17
61	L	Real estate services.....	289	258	205	204	210	205	210	175
62	M	Professional, scientific and technical services.....	2,618	2,338	1,764	1,674	1,619	1,562	1,559	1,280
63	N	Administrative and support services.....	115	103	93	97	99	97	96	77
64	O	Public administration and defence services.....	1,019	880	598	551	510	480	486	420
65	P	Education services.....	46	39	28	28	27	26	26	22
66	Q	Human health and social work services.....	156	136	105	108	110	106	109	96
67	R-T	Other services.....	1,725	1,523	1,091	1,015	947	905	890	727
68		All homogeneous branches.....	21,323	18,420	12,843	12,182	11,455	10,898	10,601	8,778
69		Private households.....	32,115	28,743	22,878	22,496	21,520	21,008	20,444	21,511
70		All homogeneous branches and private households (residents concept).....	53,437	47,163	35,721	34,678	32,975	31,906	31,045	30,288
71		Transitional balance 2.....	1,177	-2,144	-1,275	-1,182	-1,007	-811	-707	-705
72		Total emissions (domestic concept).....	54,614	45,019	34,446	33,496	31,968	31,095	30,339	29,583

¹ Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

² Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.14.1: Direct emissions of particulate matter (PM_{2.5})

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	17,870	15,455	14,398	14,277	14,316	14,336	14,256	14,116
2	01	Products of agriculture, hunting and related services.....	17,318	14,997	14,143	14,044	14,171	14,197	14,114	13,984
3	02	Products of forestry, logging and related services.....	422	359	218	201	113	110	108	101
4	03	Fish and other fishing products; aquaculture products.....	130	99	37	33	31	30	34	31
5	B	Mining and quarrying.....	2,690	2,358	2,117	2,291	2,203	2,187	2,161	2,096
6	05	Coal and lignite.....	1,076	1,057	968	1,046	1,024	1,010	987	977
7	06	Crude petroleum and natural gas.....	20	17	11	10	9	9	8	7
8	07-09	Metal ores, other mining and quarrying products.....	1,595	1,283	1,138	1,235	1,169	1,168	1,166	1,112
9	C	Manufactured products.....	24,003	18,542	12,009	12,219	11,369	11,203	11,373	11,081
10	10-12	Food products, beverages, tobacco products.....	562	634	507	493	499	425	482	383
11	13-15	Textiles, wearing apparel, leather and related products.....	46	36	18	15	14	15	14	10
12	16	Wood and products of wood and cork, except furniture.....	1,337	1,867	1,557	1,755	1,356	1,433	1,695	1,618
13	17	Paper and paper products.....	584	591	537	453	427	415	392	419
14	18	Printing and recording services.....	1,115	1,112	811	795	797	798	802	810
15	19	Coke and refined petroleum products.....	1,489	1,518	941	915	830	804	669	647
16	19.1	Coke oven products.....	34	20	89	87	88	90	95	96
17	19.2	Refined petroleum products.....	1,455	1,498	852	828	742	714	573	551
18	20	Chemicals and chemical products.....	819	594	683	596	560	540	541	525
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	66	36	34	37	35	34	31	31
20	22	Rubber and plastic products.....	79	100	56	50	53	45	44	56
21	23	Other non-metallic mineral products.....	5,215	3,388	2,446	2,666	2,525	2,420	2,444	2,338
22	23.1	Glass and glass products.....	82	95	98	120	95	97	108	110
23	23.2-9	Refractory products, cut, shaped and finished stone.....	5,133	3,292	2,348	2,546	2,431	2,324	2,336	2,228
24	24	Basic metals.....	10,547	6,636	2,906	2,959	2,820	2,858	2,887	2,947
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	8,421	5,736	2,432	2,452	2,346	2,352	2,370	2,434
26	24.4	Basic precious and other non-ferrous metals.....	1,342	499	344	365	348	393	415	421
27	24.5	Casting services of metal.....	784	402	130	143	125	113	103	92
28	25	Fabricated metal products, except machinery and equipment.....	1,089	1,062	792	791	771	772	773	775
29	26	Computer, electronic and optical products.....	94	78	54	51	49	46	43	36
30	27	Electrical equipment.....	90	72	50	47	45	41	39	32
31	28	Machinery and equipment n.e.c.....	208	174	128	126	124	116	110	90
32	29	Motor vehicles, trailers and semi-trailers.....	331	293	197	185	186	170	155	130
33	30	Other transport equipment.....	63	54	39	35	35	33	32	26
34	31-32	Furniture, other manufacture goods.....	232	264	227	223	221	214	200	192
35	33	Repair and installation services of machinery and equipment.....	38	32	24	26	23	22	21	17
36	D (35)	Electricity, gas, steam and air conditioning.....	10,743	10,692	10,427	10,516	9,859	10,091	9,922	9,701
37	35.1/.3	Electricity, transmission and distribution services, steam.....	10,725	10,677	10,410	10,498	9,834	9,974	9,785	9,567
38	35.2	Manufactured gas.....	17	15	16	18	24	118	137	134
39	E	Water supply; sewerage, waste management and remediation services.....	2,356	1,924	1,078	958	782	728	646	544
40	36	Natural water; water treatment and supply services.....	48	40	24	20	17	15	14	12
41	37-39	Sewerage services; waste collection and materials recovery services.....	2,308	1,883	1,054	938	766	712	632	532
42	37	Sewerage services, sewerage sludge.....	211	179	113	100	89	83	78	65
43	38-39	Waste collection, treatment and disposal services.....	2,096	1,704	941	838	677	630	553	467
44	F	Constructions and construction works.....	7,761	4,975	3,683	3,628	3,471	3,644	3,509	3,149
45	41-42	Building and building construction works.....	4,343	2,765	2,088	2,022	1,990	2,214	2,094	1,875
46	43	Specialised construction works.....	3,418	2,210	1,595	1,605	1,481	1,431	1,415	1,274
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	2,875	2,259	1,487	1,357	1,211	1,114	1,045	869
48	45	Wholesale and retail trade and repair services of motor vehicles.....	435	338	225	149	133	126	125	104
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	1,605	1,299	804	759	664	593	534	438
50	47	Retail trade services, except of motor vehicles and motorcycles.....	835	621	458	450	414	394	386	326
51	H	Transportation and storage services.....	52,472	177,666	94,555	81,474	94,605	96,928	91,920	93,411
52	49.1-2	Passenger rail transport services, freight rail transport services.....	1,960	1,113	953	980	880	854	826	808
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	9,907	7,242	7,907	8,598	8,114	8,141	8,268	8,127
54	50	Water transport services.....	37,512	166,277	83,247	69,617	83,299	85,613	80,688	82,442
55	51	Air transport services.....	1,369	1,610	1,595	1,555	1,687	1,702	1,650	1,633
56	52	Warehousing and support services for transportation.....	1,203	995	596	532	461	446	252	208
57	53	Postal and courier services.....	521	430	256	191	163	172	236	194
58	I	Accommodation and food services.....	162	101	78	79	72	70	80	65
59	J	Information and communication services.....	711	594	349	381	340	313	285	234
60	K	Financial and insurance services.....	56	37	22	21	21	21	19	18
61	L	Real estate services.....	242	206	148	144	144	139	139	116
62	M	Professional, scientific and technical services.....	2,158	1,858	1,278	1,189	1,127	1,068	1,037	854
63	N	Administrative and support services.....	99	85	71	72	73	71	69	57
64	O	Public administration and defence services.....	1,496	1,346	868	805	692	556	575	515
65	P	Education services.....	103	66	54	54	61	51	48	44
66	Q	Human health and social work services.....	286	173	149	148	143	123	122	114
67	R-T	Other services.....	1,504	1,275	847	786	730	672	644	536
68		All homogeneous branches.....	127,586	239,611	143,618	130,399	141,218	143,314	137,849	137,519
69		Private households.....	60,539	54,400	56,436	51,074	47,602	47,689	41,815	43,514
70		All homogeneous branches and private households (residents concept) 2.....	188,125	294,011	200,054	181,473	188,820	191,003	179,665	181,033
71		Transitional balance 3.....	18,152	-104,096	-58,793	-45,261	-60,399	-64,987	-60,263	-65,743
72		Total emissions (domestic concept) 2.....	206,277	189,915	141,261	136,212	128,421	126,016	119,401	115,290

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

3 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.14.2: Direct emissions of particulate matter (PM_{2.5}) per unit energy consumption (not including road transport)

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	10,519	8,183	6,811	6,461	6,235	5,988	5,847	5,766
2	01	Products of agriculture, hunting and related services.....	9,996	7,750	6,572	6,245	6,106	5,863	5,719	5,646
3	02	Products of forestry, logging and related services.....	396	337	203	185	99	97	96	91
4	03	Fish and other fishing products; aquaculture products.....	127	96	35	31	30	29	32	30
5	B	Mining and quarrying.....	57	65	42	74	19	27	16	26
6	05	Coal and lignite.....	17	23	14	49	2	6	4	4
7	06	Crude petroleum and natural gas.....	1	1	0	0	0	0	0	0
8	07-09	Metal ores, other mining and quarrying products.....	39	41	27	24	17	20	11	22
9	C	Manufactured products.....	3,090	3,820	3,097	3,052	2,548	2,520	2,689	2,639
10	10-12	Food products, beverages, tobacco products.....	137	249	198	146	149	125	167	118
11	13-15	Textiles, wearing apparel, leather and related products.....	26	20	6	4	4	6	5	3
12	16	Wood and products of wood and cork, except furniture.....	350	843	847	1,057	667	736	1,005	936
13	17	Paper and paper products.....	542	551	505	423	398	386	364	394
14	18	Printing and recording services.....	7	4	2	2	2	2	2	2
15	19	Coke and refined petroleum products.....	1,171	1,266	751	701	648	626	498	483
16	19.1	Coke oven products.....	34	20	89	87	87	90	95	95
17	19.2	Refined petroleum products.....	1,137	1,246	662	614	561	536	403	387
18	20	Chemicals and chemical products.....	313	197	339	259	232	215	216	209
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	37	12	17	22	19	19	17	20
20	22	Rubber and plastic products.....	20	49	20	16	20	15	15	32
21	23	Other non-metallic mineral products.....	119	243	97	122	114	103	135	128
22	23.1	Glass and glass products.....	5	22	3	24	3	3	11	14
23	23.2-9	Refractory products, cut, shaped and finished stone.....	114	221	94	98	111	101	124	114
24	24	Basic metals.....	50	54	19	18	16	17	16	69
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	39	41	8	6	6	5	6	58
26	24.4	Basic precious and other non-ferrous metals.....	7	11	9	9	7	8	9	10
27	24.5	Casting services of metal.....	4	2	2	3	3	3	1	2
28	25	Fabricated metal products, except machinery and equipment.....	38	24	33	25	26	29	28	31
29	26	Computer, electronic and optical products.....	8	5	3	3	4	4	3	3
30	27	Electrical equipment.....	15	8	5	5	5	3	3	3
31	28	Machinery and equipment n.e.c.....	36	27	25	24	23	21	20	16
32	29	Motor vehicles, trailers and semi-trailers.....	18	28	14	14	16	12	8	10
33	30	Other transport equipment.....	2	2	3	1	1	2	1	1
34	31-32	Furniture, other manufacture goods.....	199	236	208	205	203	197	184	179
35	33	Repair and installation services of machinery and equipment.....	0	0	2	4	2	2	2	2
36	D (35)	Electricity, gas, steam and air conditioning.....	10,542	10,516	10,282	10,398	9,739	9,973	9,803	9,603
37	35.1/.3	Electricity, transmission and distribution services, steam.....	10,542	10,516	10,278	10,394	9,728	9,869	9,685	9,485
38	35.2	Manufactured gas.....	0	0	4	4	11	105	118	118
39	E	Water supply; sewerage, waste management and remediation services.....	68	25	49	59	35	66	51	49
40	36	Natural water; water treatment and supply services.....	0	0	0	0	0	0	0	0
41	37-39	Sewerage services; waste collection and materials recovery services.....	68	25	49	59	35	66	51	49
42	37	Sewerage services, sewerage sludge.....	0	0	0	0	0	0	0	0
43	38-39	Waste collection, treatment and disposal services.....	68	25	49	59	35	66	51	49
44	F	Constructions and construction works.....	4,133	2,104	1,485	1,489	1,325	1,282	1,250	1,215
45	41-42	Building and building construction works.....	2,066	1,051	740	741	659	637	622	605
46	43	Specialised construction works.....	2,067	1,053	745	747	666	645	628	610
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	330	119	93	95	63	60	62	59
48	45	Wholesale and retail trade and repair services of motor vehicles.....	51	14	14	11	10	10	10	9
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	64	19	15	22	10	10	11	11
50	47	Retail trade services, except of motor vehicles and motorcycles.....	215	86	64	63	42	41	41	39
51	H	Transportation and storage services.....	39,279	167,687	84,545	70,866	84,617	86,908	81,938	83,668
52	49.1-2	Passenger rail transport services, freight rail transport services.....	1,227	491	360	388	318	294	275	260
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	0	9	7	7	7	9	8	8
54	50	Water transport services.....	36,686	165,579	82,584	68,917	82,605	84,901	80,000	81,762
55	51	Air transport services.....	1,354	1,598	1,588	1,549	1,681	1,697	1,648	1,631
56	52	Warehousing and support services for transportation.....	7	7	5	4	5	6	5	5
57	53	Postal and courier services.....	4	2	1	1	1	1	1	1
58	I	Accommodation and food services.....	98	45	36	36	29	29	38	29
59	J	Information and communication services.....	25	17	8	6	7	8	6	6
60	K	Financial and insurance services.....	32	17	8	6	7	8	6	6
61	L	Real estate services.....	7	3	2	1	1	1	1	1
62	M	Professional, scientific and technical services.....	33	23	13	11	12	13	10	10
63	N	Administrative and support services.....	6	5	5	4	4	4	5	5
64	O	Public administration and defence services.....	591	582	385	366	292	186	210	196
65	P	Education services.....	63	33	32	32	41	31	29	28
66	Q	Human health and social work services.....	150	57	67	65	60	45	44	46
67	R-T	Other services.....	55	32	30	39	48	33	32	32
68		All homogeneous branches.....	69,077	193,333	106,988	93,062	105,082	107,182	102,037	103,383
69		Private households.....	20,999	20,408	28,957	24,060	21,129	22,132	17,358	18,388
70		All homogeneous branches and private households (residents concept) 2.....	90,076	213,741	135,944	117,122	126,211	129,315	119,395	121,771
71		Transitional balance 3.....	16,975	-101,952	-57,518	-44,079	-59,392	-64,176	-59,557	-65,038
72		Total emissions (domestic concept) 2.....	107,051	111,789	78,427	73,043	66,819	65,139	59,839	56,734

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

2 Including emissions from international navigation, which are separately accounted (as Memo item) in Kyoto Reporting.

3 Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.

Table 4.14.3: Direct process emissions of particulate matter (PM_{2.5})

tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	7,031	6,999	7,405	7,640	7,915	8,189	8,249	8,213
2	01	Products of agriculture, hunting and related services.....	7,031	6,999	7,405	7,640	7,915	8,189	8,249	8,213
3	02	Products of forestry, logging and related services.....	-	-	-	-	-	-	-	-
4	03	Fish and other fishing products; aquaculture products.....	-	-	-	-	-	-	-	-
5	B	Mining and quarrying.....	2,549	2,221	2,030	2,178	2,147	2,127	2,114	2,045
6	05	Coal and lignite.....	1,035	1,014	942	989	1,015	997	976	968
7	06	Crude petroleum and natural gas.....	-	-	-	-	-	-	-	-
8	07-09	Metal ores, other mining and quarrying products.....	1,514	1,207	1,088	1,190	1,132	1,130	1,138	1,076
9	C	Manufactured products.....	19,416	13,448	8,021	8,297	7,988	7,904	7,944	7,837
10	10-12	Food products, beverages, tobacco products.....	268	250	214	261	263	218	236	200
11	13-15	Textiles, wearing apparel, leather and related products.....	-	-	-	-	-	-	-	-
12	16	Wood and products of wood and cork, except furniture.....	965	1,006	698	687	678	687	680	674
13	17	Paper and paper products.....	7	11	11	12	12	12	12	12
14	18	Printing and recording services.....	1,088	1,090	797	783	785	787	791	801
15	19	Coke and refined petroleum products.....	267	208	159	181	146	145	140	138
16	19.1	Coke oven products.....	-	-	-	-	-	-	-	-
17	19.2	Refined petroleum products.....	267	208	159	181	146	145	140	138
18	20	Chemicals and chemical products.....	396	304	277	275	270	270	272	272
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	-	-	-	-	-	-	-	-
20	22	Rubber and plastic products.....	-	-	-	-	-	-	-	-
21	23	Other non-metallic mineral products.....	5,060	3,114	2,328	2,523	2,392	2,299	2,291	2,196
22	23.1	Glass and glass products.....	69	66	90	91	87	90	93	93
23	23.2-9	Refractory products, cut, shaped and finished stone.....	4,991	3,048	2,238	2,432	2,305	2,209	2,198	2,103
24	24	Basic metals.....	10,417	6,514	2,839	2,891	2,756	2,797	2,829	2,843
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	8,338	5,658	2,398	2,418	2,316	2,324	2,342	2,359
26	24.4	Basic precious and other non-ferrous metals.....	1,310	466	320	339	325	370	392	399
27	24.5	Casting services of metal.....	769	390	121	133	116	103	95	85
28	25	Fabricated metal products, except machinery and equipment.....	949	951	698	686	687	689	693	701
29	26	Computer, electronic and optical products.....	-	-	-	-	-	-	-	-
30	27	Electrical equipment.....	-	-	-	-	-	-	-	-
31	28	Machinery and equipment n.e.c.....	-	-	-	-	-	-	-	-
32	29	Motor vehicles, trailers and semi-trailers.....	-	-	-	-	-	-	-	-
33	30	Other transport equipment.....	-	-	-	-	-	-	-	-
34	31-32	Furniture, other manufacture goods.....	-	-	-	-	-	-	-	-
35	33	Repair and installation services of machinery and equipment.....	-	-	-	-	-	-	-	-
36	D (35)	Electricity, gas, steam and air conditioning.....	-	-	-	-	-	-	-	-
37	35.1/.3	Electricity, transmission and distribution services, steam.....	-	-	-	-	-	-	-	-
38	35.2	Manufactured gas.....	-	-	-	-	-	-	-	-
39	E	Water supply; sewerage, waste management and remediation services.....	-	-	-	-	-	-	-	-
40	36	Natural water; water treatment and supply services.....	-	-	-	-	-	-	-	-
41	37-39	Sewerage services; waste collection and materials recovery services.....	-	-	-	-	-	-	-	-
42	37	Sewerage services, sewerage sludge.....	-	-	-	-	-	-	-	-
43	38-39	Waste collection, treatment and disposal services.....	-	-	-	-	-	-	-	-
44	F	Constructions and construction works.....	1,662	1,185	967	893	936	1,203	1,098	954
45	41-42	Building and building construction works.....	1,662	1,185	967	893	936	1,203	1,098	954
46	43	Specialised construction works.....	-	-	-	-	-	-	-	-
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	-	-	-	-	-	-	-	-
48	45	Wholesale and retail trade and repair services of motor vehicles.....	-	-	-	-	-	-	-	-
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
50	47	Retail trade services, except of motor vehicles and motorcycles.....	-	-	-	-	-	-	-	-
51	H	Transportation and storage services.....	8,944	6,465	7,936	8,753	8,373	8,527	8,679	8,674
52	49.1-2	Passenger rail transport services, freight rail transport services.....	712	604	583	583	557	555	548	545
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	7,420	5,176	6,696	7,476	7,127	7,265	7,470	7,470
54	50	Water transport services.....	812	685	656	694	689	707	662	659
55	51	Air transport services.....	-	-	-	-	-	-	-	-
56	52	Warehousing and support services for transportation.....	-	-	-	-	-	-	-	-
57	53	Postal and courier services.....	-	-	-	-	-	-	-	-
58	I	Accommodation and food services.....	-	-	-	-	-	-	-	-
59	J	Information and communication services.....	-	-	-	-	-	-	-	-
60	K	Financial and insurance services.....	-	-	-	-	-	-	-	-
61	L	Real estate services.....	-	-	-	-	-	-	-	-
62	M	Professional, scientific and technical services.....	-	-	-	-	-	-	-	-
63	N	Administrative and support services.....	-	-	-	-	-	-	-	-
64	O	Public administration and defence services.....	-	-	-	-	-	-	-	-
65	P	Education services.....	-	-	-	-	-	-	-	-
66	Q	Human health and social work services.....	-	-	-	-	-	-	-	-
67	R-T	Other services.....	5	6	7	7	7	8	8	9
68		All homogeneous branches.....	39,607	30,324	26,365	27,768	27,368	27,957	28,093	27,732
69		Private households.....	13,646	11,585	11,092	11,156	11,478	11,107	10,595	10,889
70		All homogeneous branches and private households.....	53,254	41,908	37,457	38,924	38,846	39,064	38,688	38,621

1 Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

Table 4.14.4: Direct emissions of particulate matter (PM_{2,5}) of road transport tonnes

No.	CPA ¹	Homogeneous branches	2000	2005	2010	2011	2012	2013	2014	2015
1	A	Products of agriculture, forestry and fishing.....	320	273	182	177	165	159	160	136
2	01	Products of agriculture, hunting and related services.....	291	248	166	159	150	145	146	125
3	02	Products of forestry, logging and related services.....	26	22	14	16	14	13	12	10
4	03	Fish and other fishing products; aquaculture products.....	3	3	2	2	1	1	1	1
5	B	Mining and quarrying.....	85	72	46	39	36	33	31	26
6	05	Coal and lignite.....	24	20	13	8	7	6	6	5
7	06	Crude petroleum and natural gas.....	19	16	10	10	9	9	8	7
8	07-09	Metal ores, other mining and quarrying products.....	42	35	23	21	20	18	17	14
9	C	Manufactured products.....	1,497	1,274	891	869	833	779	739	606
10	10-12	Food products, beverages, tobacco products.....	158	135	94	86	88	82	79	64
11	13-15	Textiles, wearing apparel, leather and related products.....	20	17	12	11	10	9	9	7
12	16	Wood and products of wood and cork, except furniture.....	21	18	13	11	11	11	10	8
13	17	Paper and paper products.....	35	29	21	19	18	17	16	13
14	18	Printing and recording services.....	20	17	12	11	10	9	9	7
15	19	Coke and refined petroleum products.....	51	43	31	32	35	33	31	26
16	19.1	Coke oven products.....	0	0	0	0	0	0	0	0
17	19.2	Refined petroleum products.....	51	43	30	32	35	33	31	26
18	20	Chemicals and chemical products.....	110	94	66	62	59	55	53	43
19	21	Basic pharmaceutical products and pharmaceutical preparations.....	29	24	17	15	16	15	14	12
20	22	Rubber and plastic products.....	60	51	36	34	33	31	29	24
21	23	Other non-metallic mineral products.....	36	31	22	21	20	18	18	15
22	23.1	Glass and glass products.....	9	7	5	5	4	4	4	3
23	23.2-9	Refractory products, cut, shaped and finished stone.....	28	23	16	16	15	14	14	11
24	24	Basic metals.....	79	68	47	50	47	44	42	34
25	24.1-3	Basic iron and steel and ferro-alloys, other products of steel.....	43	37	26	27	25	23	22	18
26	24.4	Basic precious and other non-ferrous metals.....	25	21	15	16	16	15	14	12
27	24.5	Casting services of metal.....	11	10	7	7	7	6	6	5
28	25	Fabricated metal products, except machinery and equipment.....	102	87	61	80	57	54	52	42
29	26	Computer, electronic and optical products.....	85	73	51	48	45	42	40	33
30	27	Electrical equipment.....	75	64	45	42	40	37	36	29
31	28	Machinery and equipment n.e.c.....	172	147	103	101	101	95	91	74
32	29	Motor vehicles, trailers and semi-trailers.....	312	265	183	171	170	159	147	120
33	30	Other transport equipment.....	61	52	36	34	34	32	30	25
34	31-32	Furniture, other manufacture goods.....	32	28	19	18	18	16	16	13
35	33	Repair and installation services of machinery and equipment.....	38	32	23	22	21	20	19	15
36	D (35)	Electricity, gas, steam and air conditioning.....	201	175	145	118	119	118	119	98
37	35.1/.3	Electricity, transmission and distribution services, steam.....	184	160	132	105	106	105	99	82
38	35.2	Manufactured gas.....	17	15	13	13	13	13	20	16
39	E	Water supply; sewerage, waste management and remediation services.....	2,288	1,899	1,029	899	748	662	595	495
40	36	Natural water; water treatment and supply services.....	48	40	24	20	17	15	14	12
41	37-39	Sewerage services; waste collection and materials recovery services.....	2,240	1,858	1,005	879	731	647	581	483
42	37	Sewerage services, sewerage sludge.....	211	179	113	100	89	83	78	65
43	38-39	Waste collection, treatment and disposal services.....	2,029	1,679	892	779	642	564	503	418
44	F	Constructions and construction works.....	1,966	1,686	1,231	1,246	1,210	1,160	1,161	979
45	41-42	Building and building construction works.....	615	530	381	388	395	374	374	315
46	43	Specialised construction works.....	1,351	1,156	850	858	815	786	787	664
47	G	Wholesale and retail trade services; repair services of motor vehicles.....	2,545	2,139	1,394	1,262	1,148	1,054	984	810
48	45	Wholesale and retail trade and repair services of motor vehicles.....	385	324	211	137	123	116	115	95
49	46	Wholesale trade services, except of motor vehicles and motorcycles.....	1,541	1,280	789	737	653	584	523	427
50	47	Retail trade services, except of motor vehicles and motorcycles.....	619	535	394	387	371	354	345	287
51	H	Transportation and storage services.....	4,249	3,515	2,074	1,854	1,615	1,493	1,303	1,070
52	49.1-2	Passenger rail transport services, freight rail transport services.....	21	18	10	9	5	5	3	2
53	49.3-5	Other passenger land transport services, transport service via pipeline.....	2,487	2,057	1,204	1,115	980	867	791	649
54	50	Water transport services.....	14	12	7	6	5	5	26	21
55	51	Air transport services.....	15	12	7	6	6	5	3	2
56	52	Warehousing and support services for transportation.....	1,196	988	591	527	457	440	247	203
57	53	Postal and courier services.....	516	427	255	191	162	171	235	193
58	I	Accommodation and food services.....	65	56	43	43	43	41	42	36
59	J	Information and communication services.....	685	577	341	375	333	305	279	228
60	K	Financial and insurance services.....	24	20	14	15	14	13	13	12
61	L	Real estate services.....	235	203	146	143	143	138	138	115
62	M	Professional, scientific and technical services.....	2,125	1,836	1,265	1,178	1,115	1,055	1,026	844
63	N	Administrative and support services.....	92	80	66	68	69	67	64	52
64	O	Public administration and defence services.....	905	763	483	439	400	370	365	318
65	P	Education services.....	40	34	22	21	21	19	19	16
66	Q	Human health and social work services.....	136	115	82	83	83	78	77	68
67	R-T	Other services.....	1,444	1,237	810	740	674	631	604	495
68		All homogeneous branches.....	18,902	15,954	10,265	9,568	8,769	8,174	7,719	6,404
69		Private households.....	25,894	22,407	16,387	15,858	14,994	14,451	13,862	14,237
70		All homogeneous branches and private households (residents concept).....	44,796	38,361	26,652	25,427	23,763	22,624	21,581	20,640
71		Transitional balance 2.....	1,177	-2,144	-1,275	-1,182	-1,007	-811	-707	-705
72		Total emissions (domestic concept).....	45,973	36,217	25,377	24,244	22,756	21,814	20,875	19,935

¹ Statistical Classification of Products by Activity (CPA) of the European Union (2008 edition).

² Emissions of non-resident production units in Germany less production units located in the rest of the world that are resident in Germany.