

Economy and Use of Environmental Resources

Tables on Environmental-Economic Accounting
Part 5: Land use, Environmental protection measures



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You may contact us at:
www.destatis.de/Contact
Telephone: +49 (0) 611 / 75 24 05

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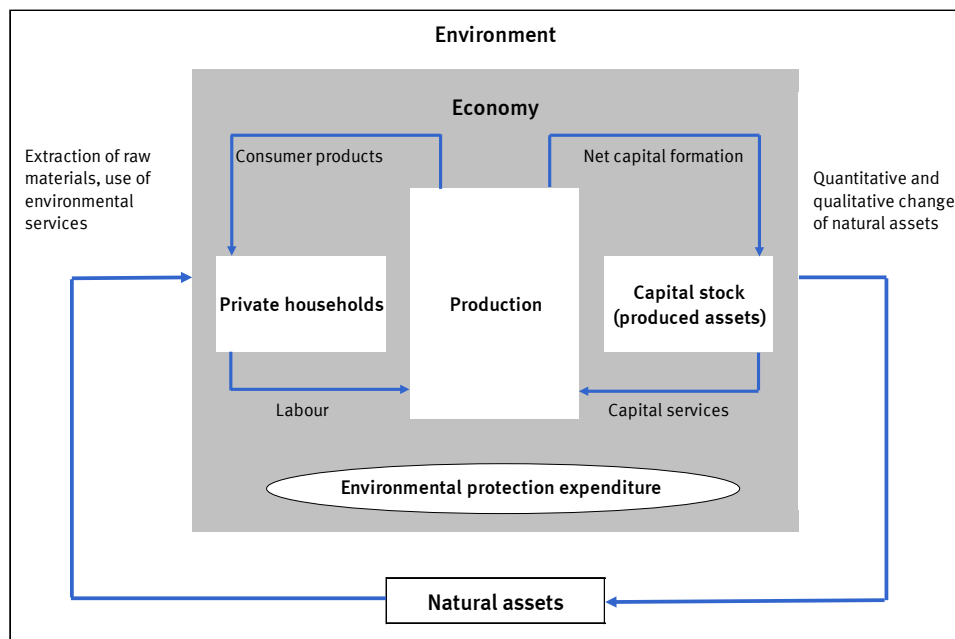
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1 Environmental-Economic Accounting of the Federal Statistical Office

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.

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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.

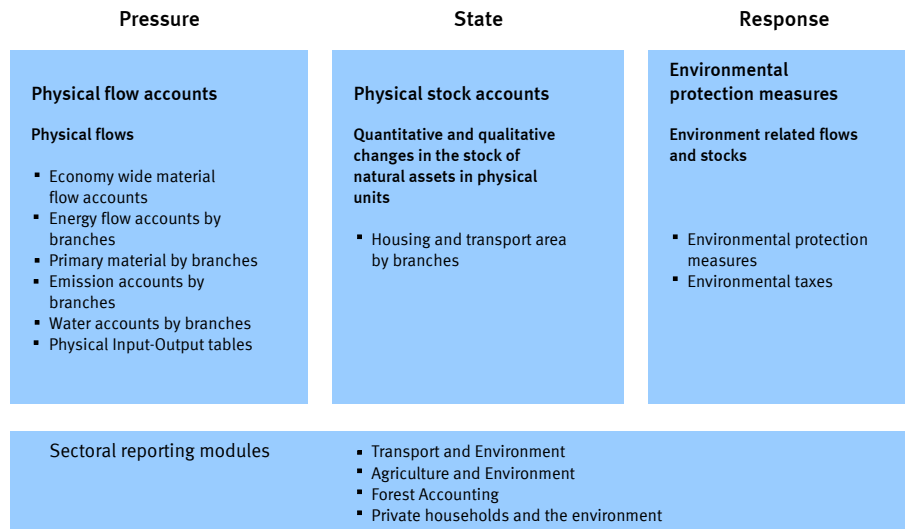
The concept underlying the EEA is to express the status quo and the change in natural assets in units of money, so as to be able to determine what is known as corrected macro-economic aggregates, such as the ecological domestic product. Particularly insofar as such evaluations do not assess the quantitative 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

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.

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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

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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

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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

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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	

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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

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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

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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

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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

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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.

General notes

Land use

The macroeconomic information from Environmental-Economic Accounting on use of area is obtained directly from the area survey. Originally performed every four years, this survey has been performed annually since 2009, with 31 December as the cut-off date. The data is based on the automated land registers (*Automatisierte Liegenschaftsbücher/ALB*) of the federal state survey offices (*Landesvermessungsverwaltungen*). This data basis will gradually be changed over to the official land registry information system (*Amtliches Liegenschaftskataster-Informationssystem/ALKIS*) over the course of the next few years.

The results of the land survey form the starting point for the allocation of housing area among users (homogeneous branches and private households). Attribution is carried out by the so-called "user concept". Accordingly, for instance the area used for housing which is included the national accounts in the homogeneous branch letting housing, is attributed directly to the private households.

Many and diverse sources are analysed and a large number of allocation codes are created to facilitate allocation to users. Because of procedural uncertainties in estimating, the results must be carefully interpreted, in particular in detailed sub-division by homogeneous branches.

In addition to the area which could be attributed to the individual production and consumption activities, there is a part of the housing area which is used at the respective observed time neither directly for production nor for consumption purposes (un-used housing area). This includes for instance construction sites, areas with unused buildings, disused plant area or undeveloped area kept ready for expansion or for establishing new plant.

For the time being, due to this phase of change-over at the official land registers, housing area is not presented by economic activities and private households for the time being, since it would not produce any reliable results.

Further information on land use statistics can be found in the internet under:

www.destatis.de/LandUse

Environmental protection measures

Environmental protection expenditure

The calculation of environmental protection expenditure is based on the concepts of the national accounts, so that the definitions and delimitations of the elements portrayed, as well as the portrayal units and their combination to the industries, concur with those of the national accounts.

The initial data used originate from finance statistics (annual account statistics of the public budget) and from the statistics on investment in environmental protection, as well as from current expenditure on environmental protection in the production industries. Further, data are used from the statistics on annual statements of public funds, facilities and enterprises. The environmental protection expenditure of certain subareas is not included in the results because of a lack of data. This applies for instance to agriculture, the construction industry, parts of the service sector, in particular the purely private waste and waste water disposal enterprises, private households as well as the expenditure on nature conservation and soil decontamination. As of reporting year 2003, what is known as integrated environmental protection measures were included in the calculations (contrary to end-of-the-pipe measures).

In April 2014, the European regulation on environmental economic accounts has been extended to include a module¹ on environmental protection expenditures. From the end of 2017 onwards it will be mandatory for all EU Member States to deliver national data on environmental protection expenditure starting with the reporting year 2014. The calculations are currently being revised and converted to meet the concepts and requirements of the EU Regulation. As to the writing of this report, no comprehensive data provision following the new concept could be presented, this section shows two summary tables with the previous year's results. The report "Economy-wide environmental protection expenditure accounts for Germany" provides essential preliminary work for the implementation of the EU regulation and is available on www.destatis.de › Publications › Specialized publications › Environmental-Economic Accounting › Environmental protection measures

Environmental taxes

The concept of statistics on environmental taxes was drafted at international level by the OECD and the Statistical Office of the European Communities (Eurostat). In doing so, a pragmatic approach was selected which exclusively uses the tax basis as a base. The relevant point is that the tax refers to a physical unit (or a proxy for this), which has a proven negative impact on the environment. In concrete terms this includes emissions in the widest sense (atmospheric emissions, waste water, waste, noise), energy products, fertilisers, pesticides and transport. At the same time, it was determined that value added tax, which is levied on energy products, motor vehicles, fertilisers and pesticides and the like is not counted among the environmental taxes.

For environmentally related tax revenues, revenues from the energy tax, electricity tax, vehicle tax, air traffic tax and nuclear fuel tax are summarized. In addition, the proceeds from the sale of emissions permits are included. They are based on the taxes' concepts of national accounts.

For the interpretation of the results tax rates, tax exemptions, and tax reductions are to be included. Hence, for instance reduced tax rates were decided for agriculture, production industries as well as for rail and local public transport. Combined heat and power production, as well as electricity from renewable energy sources, were exempted from the tax.

1) Regulation (EU) No 538/2014 of the European Parliament and of the council of 16 April 2014 amending Regulation (EU) No 691/2011 on European environmental economic accounts.

Glossary

Land Use

AdV classification of land use types	"Classification of the types of land use in the land register and their definitions" of the Working Party of the Land Surveying Office of the <i>Länder</i> of the Federal Republik of Germany (AdV).
Agricultural area	Non-built-up areas used for arable farming, meadow and pasture farming, horticulture, fruit growing and viticulture, as well as moorland and heathland.
Area	Area up to the coastline - which is the border between the sea and the mainland at mean sea level - including inland waters (without Lake of Constance).
Area of other use	Non-built-up areas not belonging to the other groups of land use types according to the AdV classification of land use types. This including exercise areas, protected areas, historic sites and cemeteries.
Building and adjacent open area	Areas with buildings (building area) and non-built-up areas (adjacent open areas) which are subordinated to the purposes of the buildings. Areas to be subordinated in this way include especially gardens, front gardens, playgrounds, parking spaces etc. which are related to the relevant buildings.
Expanse of water	Areas covered permanently or temporarily by water, irrespective of whether the water is stagnant or flows of in a natural or artificial channel.
Exploitation area	Non-built-up areas used mainly for exploitation of the soil.
Housing and transport area	The housing and transport area includes building and adjacent open area, operating area (except exploitation area), recreation area, cemetery and transport area. Housing and transport area and sealed area cannot be considered identical since housing and transport area may also include areas that are neither housing nor sealed. Estimates reveal a degree of sealing of 43% to 50% for housing and transport areas. Even recreation areas have sealed areas, for example sports grounds.
Infertile land	Non-built-up areas which are not used for any specific purposes.
Operating area	Non-built-up areas used for commercial, industrial or supply and disposal purposes.
Recreation area	Non-built-up areas serving sport and recreation purposes.
Sealed area	Sealed areas are areas which are built-up or paved (e. g. waterbound surfaces, tarmaced, concreted or cobbled areas). Sealed areas are not explicitly shown in official statistics. gepflasterte Flächen). Versiegelte Flächen werden in der amtlichen Statistik nicht explizit nachgewiesen.
Transport area	Non-built-up areas used for road, rail and air transport and land areas used for waterway transport. Generally, this includes dividing strips, verges and buffer strips, brigdes, ditches and embankments, cycle paths, footways, parking lanes and similar facilities.
Wooded area	Non-built-up areas covered by trees or bushes.

Environmental protection measures

Current expenditure for environmental protection	Current expenditure for environmental protection include wages and salaries of people involved with the operation of pollution control equipment and environmental management as well as materials needed for environmental protection. Not included are external expenditure such as waste disposal by specialists contractors, waste water treatment, regulatory charges to environmental agencies, and payments for emission permits.
End-of-pipe expenditure	Expenditure on "end-of-pipe" technologies used to treat, handle or dispose of emissions and wastes from production. This type of spending is normally easily identified because it is usually directed toward an "add on" facility which removes, transforms or reduces emissions and discharges at the end of the production process.

Environmental taxes	Environmental taxes are taxes whose tax base is a physical unit (or a proxy of it) that has a proven specific negative impact on the environment. Four subsets of environmental taxes are distinguished: energy taxes, transport taxes, pollution taxes and resources taxes. In Germany the following taxes are included: energy tax, electricity tax, motor vehicle tax, nuclear fuel tax, air transport tax, revenues from CO ₂ emission permits.
Expenditure on environmental protection	Environmental expenditures are capital and current expenditures related to characteristic activities and facilities specified in classification of environmental protection activities. They include environmental expenditure for own purposes (ancillary activities) and for use by other economic units. At the moment data are available only for producing industries, for general government, and for private public enterprises.
Integrated investment	Integrated or clean technologies are new or modified technical facilities designed so that environmental protection is an integral part of the production process. These technologies reduce or eliminate emissions and discharges or are less resource-intensive than the equivalent "normal" technology used by other producers. Examples are closed-loop circulation, fluidized-bed combustion, or heat exchangers.
Investment expenditure for environmental protection	Investment expenditure for environmental protection: Gross fixed capital formation whose primary purpose is the prevention, reduction and elimination of pollution and other forms of degradation of the environment.
Private public enterprises	Private public enterprises are government owned enterprises set up under private law. The decisive criterion is that the government holds more than 50 % of the nominal capital or voting rights. As in SNA (System of National Accounts) these enterprises are part of the non-financial corporations sector (not of general government sector).

Table 9.1: Land use ^{*)}

No.	Type of use	1992	1996	2000	2004	2008
		Area in km²				
1	Building and adjacent open area.....	20,733	21,937	23,081	23,938	24,416
2	Operating area.....	2,427	2,514	2,528	2,518	2,456
	including:					
3	exploitation area.....	1,878	1,894	1,796	1,764	1,669
4	Recreation area.....	2,255	2,374	2,659	3,131	3,787
5	Transport area.....	16,441	16,786	17,118	17,446	17,790
	including:					
6	Road, path, square.....	14,815	15,005	15,264	15,583	15,683
7	Agricultural area.....	195,112	193,075	191,028	189,324	187,646
8	Wooded area.....	104,536	104,908	105,314	106,488	107,349
9	Expanse of water.....	7,837	7,940	8,085	8,279	8,482
10	Area of other use.....	7,630	7,497	7,219	5,925	5,185
	including:					
11	Cemetery.....	327	335	350	352	357
12	Infertile land.....	2,452	.	2,666	2,702	2,665
13	Area, total.....	356,970	357,030	357,031	357,050	357,111
	Memorandum item:					
14	Housing and transport area 1).....	40,305	42,052	43,939	45,621	47,137
		1992 = 100				
15	Building and adjacent open area.....	100	105.8	111.3	115.5	117.8
16	Operating area.....	100	103.6	104.2	103.7	101.2
	including:					
17	exploitation area.....	100	100.9	95.6	93.9	88.9
18	Recreation area.....	100	105.3	117.9	138.9	168.0
19	Transport area.....	100	102.1	104.1	106.1	108.2
	including:					
20	Road, path, square.....	100	101.3	103.0	105.2	105.9
21	Agricultural area.....	100	99.0	97.9	97.0	96.2
22	Wooded area.....	100	100.4	100.7	101.9	102.7
23	Expanse of water.....	100	101.3	103.2	105.6	108.2
24	Area of other use.....	100	98.3	94.6	77.7	68.0
	including:					
25	Cemetery.....	100	102.7	107.0	107.7	109.2
26	Infertile land.....	100	.	108.7	110.2	108.7
27	Area, total.....	100	100	100	100	100
	Memorandum item:					
28	Housing and transport area 1).....	100	104.3	109.0	113.2	117.0

^{*)} Results of the area survey by nature of the actual use (as on 31.12.).
See Fachserie 3, Reihe 5.1.

1) Housing and transport area includes 'building and adjacent open area', 'operating area (except 'exploitation area')', 'recreation area', 'transport area' and 'cemetery'.
Housing and transport area and "sealed area" cannot be considered identical since housing and transport area may also include areas that are neither housing nor sealed.

Table 9.1: Land use ^{*)}

No.	Type of use	2009	2010	2011	2012	2013
		Area in km²				
1	Building and adjacent open area.....	24,512	24,589	24,676	24,797	24,857
2	Operating area.....	2,449	2,459	2,481	2,464	2,548
	including:					
3	exploitation area.....	1,656	1,623	1,623	1,581	1,618
4	Recreation area.....	3,905	3,985	4,083	4,148	4,228
5	Transport area.....	17,856	17,931	17,993	18,032	18,100
	including:					
6	Road, path, square.....	15,709	15,737	15,743	15,754	15,787
7	Agricultural area.....	187,291	186,934	186,771	186,465	186,193
8	Wooded area.....	107,534	107,664	107,814	107,970	108,162
9	Expanse of water.....	8,513	8,557	8,576	8,634	8,671
10	Area of other use.....	5,066	5,008	4,744	4,658	4,582
	including:					
11	Cemetery.....	356	361	361	364	368
12	Infertile land.....	2,676	2,681	3,234	3,197	3,148
13	Area, total.....	357,125	357,127	357,138	357,169	357,341
	Memorandum item:					
14	Housing and transport area 1).....	47,422	47,702	47,971	48,225	48,482
		1992 = 100				
15	Building and adjacent open area.....	118.2	118.6	119.0	119.6	119.9
16	Operating area.....	100.9	101.3	102.2	101.5	105.0
	including:					
17	exploitation area.....	88.2	86.4	86.4	84.2	86.2
18	Recreation area.....	173.2	176.7	181.1	184.0	187.5
19	Transport area.....	108.6	109.1	109.4	109.7	110.1
	including:					
20	Road, path, square.....	106.0	106.2	106.3	106.3	106.6
21	Agricultural area.....	96.0	95.8	95.7	95.6	95.4
22	Wooded area.....	102.9	103.0	103.1	103.3	103.5
23	Expanse of water.....	108.6	109.2	109.4	110.2	110.6
24	Area of other use.....	66.4	65.6	62.2	61.0	60.1
	including:					
25	Cemetery.....	109.1	110.6	110.6	111.4	112.8
26	Infertile land.....	109.1	109.3	131.9	130.4	128.4
27	Area, total.....	100	100	100	100.1	100.1
	Memorandum item:					
28	Housing and transport area 1).....	117.7	118.4	119.0	119.6	120.3

*) Results of the area survey by nature of the actual use (as on 31.12.).
See Fachserie 3, Reihe 5.1.

1) Housing and transport area includes 'building and adjacent open area', 'operating area (except 'exploitation area)', 'recreation area', 'transport area' and 'cemetery'.
Housing and transport area and "sealed area" cannot be considered identical since housing and transport area may also include areas that are neither housing nor sealed.

Table 9.2: Housing area Germany

km²

No.	CPA ¹⁾	Homogeneous branches and private households	Housing area				
			Building and adjacent open area	Operating area ²⁾	Recreation area	Cemetery	Together
1992							
1	A	Products of agriculture, forestry and fishing 3).....	2,861	1	-	-	2,862
2	B - F	Production industries.....	3,012	333	-	-	3,344
3	F	Construction and construction works.....	790	82	-	-	871
4	05 - 39	Other production industries.....	2,222	251	-	-	2,473
5	G - T	Service activities.....	3,320	167	937	-	4,424
6	46	Wholesale trade services, except of motor vehicles and motorcycles.....	238	50	-	-	288
7	47	Retail trade services, except of motor vehicles and motorcycles.....	493	-	-	-	493
8	R	Arts, entertainment and recreation services.....	248	0	867	-	1,115
9		Other service activities.....	2,342	117	70	-	2,528
10		All homogeneous branches.....	9,193	501	937	-	10,631
11		Private households (domestic consumption).....	10,378	0	1,318	327	12,022
12		including: housing.....	8,351	-	-	-	8,351
13		All homogeneous branches and private households at home.....	19,571	501	2,255	327	22,653
14		Unused housing area.....	1,163	49	-	-	1,211
15		Total.....	20,733	550	2,255	327	23,864
1996							
16	A	Products of agriculture, forestry and fishing 3).....	3,030	1	-	-	3,031
17	B - F	Production industries.....	3,250	352	-	-	3,602
18	F	Construction and construction works.....	840	85	-	-	925
19	05 - 39	Other production industries.....	2,410	267	-	-	2,677
20	G - T	Service activities.....	3,447	203	991	-	4,641
21	46	Wholesale trade services, except of motor vehicles and motorcycles.....	254	59	-	-	314
22	47	Retail trade services, except of motor vehicles and motorcycles.....	520	-	-	-	520
23	R	Arts, entertainment and recreation services.....	259	0	915	-	1,174
24		Other service activities.....	2,413	143	76	-	2,633
25		All homogeneous branches.....	9,728	556	991	-	11,274
26		Private households (domestic consumption).....	10,941	0	1,383	335	12,659
27		including: housing.....	8,748	-	-	-	8,748
28		All homogeneous branches and private households at home.....	20,669	556	2,374	335	23,934
29		Unused housing area.....	1,269	65	-	-	1,333
30		Total.....	21,937	620	2,374	335	25,267
2000							
31	A	Products of agriculture, forestry and fishing 3).....	2,931	1	-	-	2,932
32	B - F	Production industries.....	3,255	394	-	-	3,649
33	F	Construction and construction works.....	803	94	-	-	897
34	05 - 39	Other production industries.....	2,452	299	-	-	2,752
35	G - T	Service activities.....	3,841	248	1,112	-	5,201
36	46	Wholesale trade services, except of motor vehicles and motorcycles.....	285	67	-	-	352
37	47	Retail trade services, except of motor vehicles and motorcycles.....	603	-	-	-	603
38	R	Arts, entertainment and recreation services.....	304	0	1,030	-	1,334
39		Other service activities.....	2,649	181	82	-	2,912
40		All homogeneous branches.....	10,027	643	1,112	-	11,782
41		Private households (domestic consumption).....	11,561	0	1,546	350	13,457
42		including: housing.....	9,309	-	-	-	9,309
43		All homogeneous branches and private households at home.....	21,589	643	2,659	350	25,240
44		Unused housing area.....	1,492	90	-	-	1,582
45		Total.....	23,081	732	2,659	350	26,821
2004							
46	A	Products of agriculture, forestry and fishing 3).....	2 739	1	-	-	2 740
47	B - F	Production industries.....	3 178	404	-	-	3 582
48	F	Construction and construction works.....	764	84	-	-	848
49	05 - 39	Other production industries.....	2 414	320	-	-	2 734
50	G - T	Service activities.....	4 187	267	1 219	-	5 673
51	46	Wholesale trade services, except of motor vehicles and motorcycles.....	320	61	-	-	381
52	47	Retail trade services, except of motor vehicles and motorcycles.....	711	-	-	-	711
53	R	Arts, entertainment and recreation services.....	348	0	1 128	-	1 476
54		Other service activities.....	2 808	206	91	-	3 104
55		All homogeneous branches.....	10 105	672	1 219	-	11 996
56		Private households (domestic consumption).....	12 414	0	1 912	352	14 678
57		including: housing.....	10 004	-	-	-	10 004
58		All homogeneous branches and private households at home.....	22 519	672	3 131	352	26 673
59		Unused housing area.....	1 420	82	-	-	1 502
60		Total.....	23 938	754	3 131	352	28 175

Table 9.2: Housing area Germany

km²

No.	CPA ¹⁾	Homogeneous branches and private households	Housing area				
			Building and adjacent open area	Operating area ²⁾	Recreation area	Cemetery	Together
			2008				
61	A	Products of agriculture, forestry and fishing ³⁾	2,894	2	-	-	2,895
62	B - F	Production industries.....	3,033	435	-	-	3,468
63	F	Construction and construction works.....	640	81	-	-	721
64	05 - 39	Other production industries.....	2,393	354	-	-	2,747
65	G - T	Service activities.....	4,564	266	1,395	-	6,225
66	46	Wholesale trade services, except of motor vehicles and motorcycles.....	369	52	-	-	422
67	47	Retail trade services, except of motor vehicles and motorcycles.....	883	-	-	-	883
68	R	Arts, entertainment and recreation services.....	378	0	1,294	-	1,673
69		Other service activities.....	2,933	214	101	-	3,247
70		All homogeneous branches.....	10,490	703	1,395	-	12,588
71		Private households (domestic consumption).....	12,682	0	2,392	357	15,430
72		including: housing.....	10,201	-	-	-	10,201
73		All homogeneous branches and private households at home.....	23,172	703	3,787	357	28,019
74		Unused housing area.....	1,244	85	-	-	1,329
75		Total.....	24,416	787	3,787	357	29,347

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

2) Excluding exploitation area.

3) The areas of kitchen gardens are attributed to consumption of private households.

Table 9.3: Housing area Germany

1992 = 100

No.	CPA ¹⁾	Homogeneous branches and private households	Housing area				
			Building and adjacent open area	Operating area ²⁾	Recreation area	Cemetery	Together
1996							
1	A	Products of agriculture, forestry and fishing 3).....	105.9	119.3	-	-	105.9
2	B - F	Production industries.....	107.9	105.7	-	-	107.7
3	F	Construction and construction works.....	106.4	103.9	-	-	106.1
4	05 - 39	Other production industries.....	108.5	106.2	-	-	108.2
5	G - T	Service activities.....	103.8	121.3	105.8	-	104.9
6	46	Wholesale trade services, except of motor vehicles and motorcycles.....	107.0	118.3	-	-	108.9
7	47	Retail trade services, except of motor vehicles and motorcycles.....	105.5	-	-	-	105.5
8	R	Arts, entertainment and recreation services.....	104.7	119.7	105.5	-	105.3
9		Other service activities.....	103.1	122.6	109.4	-	104.1
10		All homogeneous branches.....	105.8	110.9	105.8	-	106.1
11		Private households (domestic consumption).....	105.4	119.7	104.9	102.7	105.3
12		including: housing.....	104.8	-	-	-	104.8
13		All homogeneous branches and private households at home.....	105.6	110.9	105.3	102.7	105.7
14		Unused housing area.....	109.1	132.1	-	-	110.0
15		Total.....	105.8	112.8	105.3	102.7	105.9
2000							
16	A	Products of agriculture, forestry and fishing 3).....	102.5	82.1	-	-	102.5
17	B - F	Production industries.....	108.1	118.4	-	-	109.1
18	F	Construction and construction works.....	101.7	115.6	-	-	103.0
19	05 - 39	Other production industries.....	110.4	119.3	-	-	111.3
20	G - T	Service activities.....	115.7	148.5	118.7	-	117.6
21	46	Wholesale trade services, except of motor vehicles and motorcycles.....	119.8	133.0	-	-	122.1
22	47	Retail trade services, except of motor vehicles and motorcycles.....	122.3	-	-	-	122.3
23	R	Arts, entertainment and recreation services.....	123.0	163.7	118.7	-	119.7
24		Other service activities.....	113.1	155.2	118.3	-	115.2
25		All homogeneous branches.....	109.1	128.3	118.7	-	110.8
26		Private households (domestic consumption).....	111.4	133.9	117.4	107.0	111.9
27		including: housing.....	111.5	-	-	-	111.5
28		All homogeneous branches and private households at home.....	110.3	128.3	117.9	107.0	111.4
29		Unused housing area.....	128.4	183.3	-	-	130.6
30		Total.....	111.3	133.2	117.9	107.0	112.4
2004							
31	A	Products of agriculture, forestry and fishing 3).....	95.7	110.2	-	-	95.8
32	B - F	Production industries.....	105.5	121.4	-	-	107.1
33	F	Construction and construction works.....	96.8	103.2	-	-	97.4
34	05 - 39	Other production industries.....	108.6	127.3	-	-	110.5
35	G - T	Service activities.....	126.1	159.6	130.1	-	128.2
36	46	Wholesale trade services, except of motor vehicles and motorcycles.....	134.6	121.6	-	-	132.4
37	47	Retail trade services, except of motor vehicles and motorcycles.....	144.3	-	-	-	144.3
38	R	Arts, entertainment and recreation services.....	140.5	197.9	130.1	-	132.4
39		Other service activities.....	119.9	175.9	130.2	-	122.8
40		All homogeneous branches.....	109.9	134.1	130.1	-	112.8
41		Private households (domestic consumption).....	119.6	87.0	145.1	107.7	122.1
42		including: housing.....	119.8	-	-	-	119.8
43		All homogeneous branches and private households at home.....	115.1	134.1	138.9	107.7	117.7
44		Unused housing area.....	122.1	168.1	-	-	124.0
45		Total.....	115.5	137.1	138.9	107.7	118.1
2008							
46	A	Products of agriculture, forestry and fishing 3).....	101.1	151.1	-	-	101.2
47	B - F	Production industries.....	100.7	130.7	-	-	103.7
48	F	Construction and construction works.....	81.0	99.5	-	-	82.7
49	05 - 39	Other production industries.....	107.7	140.8	-	-	111.1
50	G - T	Service activities.....	137.4	159.2	148.9	-	140.7
51	46	Wholesale trade services, except of motor vehicles and motorcycles.....	155.2	104.5	-	-	146.4
52	47	Retail trade services, except of motor vehicles and motorcycles.....	179.2	-	-	-	179.2
53	R	Arts, entertainment and recreation services.....	152.8	256.0	149.2	-	150.0
54		Other service activities.....	125.2	182.7	145.0	-	128.4
55		All homogeneous branches.....	114.1	140.3	148.9	-	118.4
56		Private households (domestic consumption).....	122.2	125.0	181.5	109.2	128.3
57		including: housing.....	122.2	-	-	-	122.2
58		All homogeneous branches and private households at home.....	118.4	140.3	168.0	109.2	123.7
59		Unused housing area.....	107.0	173.6	-	-	109.7
60		Total.....	117.8	143.2	168.0	109.2	123.0

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

2) Excluding exploitation area.

3) The areas of kitchen gardens are attributed to consumption of private households.

Table 10.1: Environmental protection expenditures (at current prices)^{*)}

No.	Specification	Unit	1996	1997	1998	1999
1	Total expenditure for environmental protection 1).....	EUR mn	35,890	34,400	33,470	34,110
	of which:					
2	Industry 2).....	EUR mn	9,000	7,900	7,820	7,470
3	Government 4).....	EUR mn	12,820	11,770	10,570	10,220
4	Privatised public enterprises 3).....	EUR mn	14,070	14,740	15,080	16,420
5	Investment expenditure for environmental protection.....	EUR mn	12,920	11,280	9,850	10,330
	of which:					
6	Industry 2).....	EUR mn	2,560	1,820	1,650	1,770
7	including: integrated investment.....	EUR mn	–	–	–	–
8	Government.....	EUR mn	5,100	4,360	3,840	3,480
9	Privatised public enterprises 3) 4).....	EUR mn	5,260	5,100	4,360	5,080
10	Current expenditure for environmental protection.....	EUR mn	22,970	23,120	23,610	23,780
	of which:					
11	Industry 2) 5).....	EUR mn	6,430	6,070	6,170	5,700
12	Government 4).....	EUR mn	7,720	7,410	6,730	6,740
13	Privatised public enterprises 3) 4).....	EUR mn	8,810	9,640	10,720	11,340

*) 2010 preliminary results. Since 2003 investment include integrated and additive investments.

At present, the environmental protection expenditure accounts are revised according to the requirements from the EU regulation 538/2014.

The report "Economy-wide environmental protection expenditure accounts for Germany" provides first tables in accordance with the new concept.

1) Expenditure for environmental protection = total of capital formation and current expenditure for environmental protection purposes.

2) The following industries are not include: Water supply, Discharge of Sewage Water, Discharge of Waste (E) and Construction (F).

3) Expenditure of enterprises operating outside public budget, in particular utility undertakings of waste disposal and water protection.

These enterprises are regarded in Environmental-Economic Accounting, as in National Accounts, as being part of non-financial corporations, not as being part of general government.

4) Partly revised.

5) Not including fees and charges of disposal services provided by third parties. Results for 2005, 2007 to 2009 estimated.

Table 10.1: Environmental protection expenditures (at current prices)^{*)}

2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	No.
33,070	33,110	33,390	34,000	34,440	34,180	34,860	35,200	36,040	35,360	35,770	1
7,330	7,470	7,220	7,290	6,780	6,500	6,590	7,640	8,310	8,080	8,760	2
9,660	9,170	8,920	8,760	8,420	8,140	8,220	8,020	8,060	8,110	8,270	3
16,080	16,470	17,250	17,940	19,240	19,550	20,050	19,540	19,660	19,170	18,740	4
9,490	8,780	8,760	8,310	9,280	8,300	8,650	8,910	9,810	9,190	8,860	5
1,580	1,580	1,650	1,430	1,580	1,410	1,760	2,780	3,490	3,070	3,320	6
–	–	–	450	480	450	910	1,790	2,200	2,120	2,330	7
3,120	2,730	2,650	2,550	2,390	2,140	2,100	2,010	2,020	2,040	1,880	8
4,790	4,470	4,470	4,340	5,300	4,760	4,790	4,120	4,310	4,080	3,660	9
23,580	24,330	24,630	25,680	25,160	25,880	26,210	26,290	26,230	26,170	26,910	10
5,750	5,890	5,570	5,860	5,200	5,090	4,830	4,860	4,830	5,010	5,440	11
6,540	6,440	6,280	6,210	6,030	6,000	6,120	6,010	6,050	6,070	6,390	12
11,300	12,000	12,780	13,610	13,930	14,790	15,260	15,420	15,360	15,090	15,080	13

Table 10.2: Environmental protection expenditure per domain ^{*)}

No.	Year	Total	Waste management	Wastewater management	Noise abatement	Protection of ambient air	Nature protection, protection of landscape	Protection and remediation of soil	Climate protection	Protection against radiation
EUR mn										
1	1996	35,890	13,840	15,960	330	4,090	1,570	90	–	–
2	1997	34,400	13,550	15,570	350	3,320	1,510	100	–	–
3	1998	33,470	12,990	15,170	400	3,300	1,510	90	–	–
4	1999	34,110	13,130	15,910	390	3,020	1,540	110	–	–
5	2000	33,070	12,390	15,530	290	3,000	1,570	290	–	–
6	2001	33,110	12,870	15,090	320	3,090	1,550	180	–	–
7	2002	33,390	13,060	15,280	310	2,980	1,460	60	–	240
8	2003	34,000	12,900	15,980	360	2,910	1,470	110	–	260
9	2004	34,440	13,060	16,490	350	2,800	1,410	70	–	260
10	2005	34,180	14,030	15,530	310	2,650	1,340	70	–	250
11	2006	34,860	14,500	15,570	300	2,290	1,360	70	510	260
12	2007	35,200	14,820	14,740	300	2,520	1,240	80	1,240	250
13	2008	36,040	15,300	14,430	320	2,610	1,340	60	1,690	290
14	2009	35,360	14,350	14,600	350	2,550	1,390	70	1,720	330
15	2010 1)	35,770	14,960	13,750	360	2,660	1,400	90	2,140	420
Share of environmental domains in total (%)										
16	1996	100	38.6	44.5	0.9	11.4	4.4	0.3	–	–
17	1997	100	39.4	45.3	1.0	9.7	4.4	0.3	–	–
18	1998	100	38.8	45.3	1.2	9.9	4.5	0.3	–	–
19	1999	100	38.5	46.6	1.1	8.9	4.5	0.3	–	–
20	2000	100	37.5	47.0	0.9	9.1	4.7	0.9	–	–
21	2001	100	38.9	45.6	1.0	9.3	4.7	0.5	–	–
22	2002	100	39.1	45.8	0.9	8.9	4.4	0.2	–	0.7
23	2003	100	37.9	47.0	1.1	8.6	4.3	0.3	–	0.8
24	2004	100	37.9	47.9	1.0	8.1	4.1	0.2	–	0.8
25	2005	100	41.0	45.4	0.9	7.8	3.9	0.2	–	0.7
26	2006	100	41.6	44.7	0.9	6.6	3.9	0.2	1.5	0.7
27	2007	100	42.1	41.9	0.9	7.2	3.5	0.2	3.5	0.7
28	2008	100	42.5	40.0	0.9	7.2	3.7	0.2	4.7	0.8
29	2009	100	40.6	41.3	1.0	7.2	3.9	0.2	4.9	0.9
30	2011 1)	100	41.8	38.4	1.0	7.4	3.9	0.3	6.0	1.2

^{*)} Current expenditure and investment for environmental protection in manufacturing, government and privatised public enterprises.

At present, the environmental protection expenditure accounts are revised according to the requirements from the EU regulation 538/2014.

The report "Economy-wide environmental protection expenditure accounts for Germany" provides first tables in accordance with the new concept.

Manufacturing excluding the sectors of water supply, waste and sewage disposal (E) as well as construction (F), since 2003 including integrated investment for environmental protection measures as well as excluding fees and charges for waste disposal services by third parties. Estimated on-going expenditure in manufacturing for 2005, 2007 to 2009. -

Partly revised.

1) Preliminary results.

Table 10.3: Revenue from environment-related taxes and total tax revenue

EUR mn

No.	Year	Cash tax revenue of public budgets							
		total ¹⁾	including: environment-related taxes						air transportation tax
			together	mineral oil/ energy tax	motor vehicle tax	electricity tax	emission permits	nuclear fuel tax	
1	1995	416,337	40,236	33,177	7,059	-	-	-	-
2	1996	408,968	41,923	34,896	7,027	-	-	-	-
3	1997	407,503	41,121	33,749	7,372	-	-	-	-
4	1998	425,838	41,848	34,091	7,757	-	-	-	-
5	1999	452,998	45,299	36,444	7,039	1,816	-	-	-
6	2000	467,177	48,197	37,826	7,015	3,356	-	-	-
7	2001	446,170	53,388	40,690	8,376	4,322	-	-	-
8	2002	441,628	54,882	42,193	7,592	5,097	-	-	-
9	2003	442,167	57,055	43,188	7,336	6,531	-	-	-
10	2004	442,761	56,118	41,782	7,739	6,597	-	-	-
11	2005	452,079	55,236	40,101	8,673	6,462	-	-	-
12	2006	488,444	55,126	39,916	8,937	6,273	-	-	-
13	2007	538,243	54,207	38,955	8,898	6,355	-	-	-
14	2008	561,182	54,350	39,248	8,842	6,261	-	-	-
15	2009	524,000	55,381	39,822	8,201	6,278	1,080	-	-
16	2010	530,587	54,887	39,838	8,488	6,171	390	-	-
17	2011	573,351	58,183	40,036	8,422	7,247	650	922	905
18	2012	600,046	57,776	39,305	8,443	6,973	530	1,577	948
19	2013	619,708	57,448	39,364	8,490	7,009	321	1,285	978
20	2014	643,617	57,304	39,758	8,501	6,638	709	708	990

1) Prior to deduction of child benefit (children's allowance paid by the government and tax deductible children's allowance).

Table 10.4: Taxed mineral oil by selected types

No.	Year	Petrol, leaded and unleaded	Diesel fuel	Heating oil	Natural gas
		1,000 m ³			mn MWh
1	1995	40,036	30,425	39,208	807
2	1996	40,302	30,733	43,749	889
3	1997	40,616	31,423	41,702	845
4	1998	40,766	32,487	39,351	803
5	1999	40,870	34,018	33,412	762
6	2000	39,045	33,780	30,772	781
7	2001	37,861	34,257	35,550	839
8	2002	36,601	33,843	31,081	817
9	2003	34,872	33,105	30,393	860
10	2004	33,102	33,296	27,401	860
11	2005	30,669	31,788	27,450	895
12	2006	29,597	33,395	30,659	957
13	2007	28,742	34,601	18,480	963
14	2008	27,792	36,026	26,343	815
15	2009	27,238	35,986	23,477	734
16	2010	27,078	38,292	24,565	831
17	2011	26,734	39,485	20,949	795
18	2012	25,517	39,938	22,026	920
19	2013	24,831	40,793	22,830	923
20	2014 ³⁾	24,852	42,132	19,258	...

1) And mineral oils which have the same boiling characteristics.

2) From 2007 without gaseous hydrocarbon.

3) Preliminary results.

Table 10.5: Environmental taxes by economic activities 2013^{*)}

EUR mn

No.	WZ 2008 Code ¹⁾	Industries and private households	Energy taxes ²⁾	Transport taxes ³⁾	Total
1	A	Agriculture, forestry and fishing.....	1,255.19	18.49	1,273.67
2	01	Crop and animal production, hunting and related services.....	1,206.12	16.73	1,222.85
3	02	Forestry and logging.....	41.22	1.64	42.86
4	03	Fishing and aquaculture.....	7.85	0.12	7.97
5	B	Mining and quarrying.....	214.32	5.90	220.22
6	C	Manufacturing.....	4,799.77	350.46	5,150.23
7	10-12	Manufacture of food products, beverages and tobacco products.....	543.46	34.57	578.03
8	13-15	Manufacture of textiles, wearing apparel, leather.....	85.42	4.59	90.01
9	16	Manufacture of wood and products of wood and cork.....	56.05	4.71	60.77
10	17	Manufacture of paper and paper products.....	209.85	7.91	217.76
11	18	Printing and reproduction of recorded media.....	59.95	4.30	64.26
12	19	Manufacture of coke and refined petroleum products.....	312.56	15.79	328.36
13	20	Manufacture of chemicals and chemical products 3).....	904.33	27.87	932.20
14	21	Manufacture of basic pharmaceutical products.....	60.02	8.51	68.53
15	22	Manufacture of rubber and plastic products.....	256.29	14.73	271.03
16	23	Manufacture of other non-metallic mineral products.....	120.61	8.80	129.41
17	24	Manufacture of basic metals.....	229.67	21.05	250.72
18	25	Manufacture of fabricated metal products.....	107.04	24.21	131.25
19	26	Manufacture of computer, electronic and optical products.....	134.46	14.88	149.34
20	27	Manufacture of electrical equipment.....	280.67	20.73	301.41
21	28	Manufacture of machinery and equipment n.e.c.....	510.34	46.28	556.61
22	29	Manufacture of motor vehicles, trailers and semi-trailers.....	669.78	66.55	736.33
23	30	Manufacture of other transport equipment.....	50.12	7.40	57.51
24	31-32	Manufacture of furniture, other manufacturing.....	134.51	10.14	144.64
25	33	Repair and installation of machinery and equipment.....	74.63	7.44	82.07
26	D (35)	Electricity, gas, steam and air conditioning supply.....	2,124.07	16.68	2,140.75
27	E	Water supply; sewerage, waste management and remediation activities.....	303.28	26.15	329.43
28	36	Water collection, treatment and supply.....	89.31	4.08	93.39
29	37-39	Sewerage, waste collection, treatment and disposal activities.....	213.97	22.07	236.04
30	F	Construction.....	865.58	152.95	1,018.53
31	G	Wholesale and retail trade; repair of motor vehicles and motorcycles.....	3,638.80	349.50	3,988.30
32	45	Wholesale and retail trade and repair of motor vehicles.....	221.79	49.81	271.60
33	46	Wholesale trade; except of motor vehicles and motorcycles.....	2,555.95	169.67	2,725.62
34	47	Retail trade; except of motor vehicles and motorcycles.....	861.05	130.02	991.08
35	H	Transportation and storage.....	5,233.75	258.88	5,492.63
36	49	Land transport and transport via pipelines.....	2,200.25	90.83	2,291.08
37	50	Water transport.....	23.55	22.00	45.56
38	51	Air transport.....	7.85	19.57	27.42
39	52	Warehousing and support activities for transportation.....	2,703.75	102.42	2,806.17
40	53	Postal and courier activities.....	298.34	24.06	322.40
41	I	Accommodation and food service activities.....	251.23	12.91	264.14
42	J	Information and communication.....	378.81	64.39	443.20
43	K	Financial and insurance activities.....	188.42	25.19	213.61
44	L	Real estate activities.....	108.93	6.27	115.20
45	M	Professional, scientific and technical activities.....	362.13	23.67	385.80
46	N	Administrative and support service activities.....	322.88	228.56	551.43
47	O	Public administration and defence; compulsory social security.....	1,016.73	73.49	1,090.22
48	P	Education.....	272.05	7.51	279.56
49	Q	Human health and social work activities.....	422.12	55.07	477.19
50	R-T	Other service activities.....	389.61	571.77	961.39
51		All industries.....	22,147.66	2,247.84	24,395.51
52		Private households.....	25,200.86	7,197.46	32,398.31
53		Non-residents.....	788.48	-	788.48
54		All industries and private households (residents concept).....	48,137.00	9,445.30	57,582.30

*) Preliminary results.

1) Classification of economic activities, 2008 edition.

2) Energy tax, electricity tax, Tax on nuclear fuels and tax on emission permits.

3) Motor vehicle tax and air passenger duty.