

# **Economy and Use of Environmental Resources**

Tables on Environmental-Economic Accounting Part 1: Macroeconomic overview tables, Economic indices



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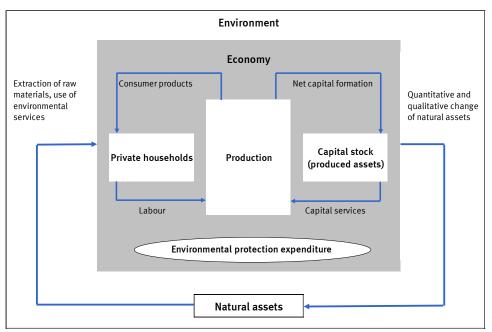
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## 1 Environmental-Economic Accounting of the Federal Statistical Office

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 economy<sup>1</sup> 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

<sup>1</sup> Both are shown the in simplified form in the diagram.

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.

Pressure	State	Response
Physical flow accounts	Physical stock accounts	Environmental protection measures
<ul> <li>Physical flows</li> <li>Economy wide material flow accounts</li> <li>Energy flow accounts by branches</li> <li>Primary material by branches</li> <li>Emission accounts by branches</li> <li>Water accounts by branches</li> <li>Physical Input-Output tables</li> </ul>	Quantitative and qualitative changes in the stock of natural assets in physical units • Housing and transport area by branches	Environment related flows and stocks • Environmental protection measures • Environmental taxes
Sectoral reporting modules	<ul> <li>Transport and Environment</li> <li>Agriculture and Environment</li> <li>Forest Accounting</li> <li>Private households and the environm</li> </ul>	ent

#### 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.

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)"<sup>2</sup>. In Germany substantial sections of the environmental economic accounts are drawn up based on these conceptual proposals in the SEEA.

<sup>&</sup>lt;sup>2</sup> 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.

### 2.1 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	В	
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	С	
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	

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 man- agement and remediation services	Water supply; sewerage, waste man- agement 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		
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 motor-cycles	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	н	
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 ser- vices; 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 ser- vices	J	
60	Financial and insurance services	Financial and insurance services	к	
61	Real estate services	Real estate services	L	
62	Professional, scientific and technical services	Professional, scientific and technical services	Μ	
63	Administrative and support services	Administrative and support services	N	
64	Public administration and defence services	Public administration and defence services	0	
65	Education services	Education services	Р	
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		

### 2.2 Classification of industries

No.	Industries	Classification of economic activities, 2008 edition			
NO.	industries	Designation			
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	В		
6	Mining of coal and lignite	Mining of coal and lignite	05		
7	Extraction of crude petroleum and nat- ural 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	с		
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		

No.	Industries	Classification of economic activities, 2008 edition		
110.	industries	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	

No.	Industries	Classification of economic activities, 2008 edition		
NO.	Industries	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 activi- ties	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	

No.	Industries	Classification of economic activities, 2008 edition		
NO.	industries	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	Н	
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	К	
61	Real estate activities	Real estate activities	L	
62	Professional, scientific and technical activities	Professional, scientific and technical activities	м	
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	0	
65	Education	Education	Р	
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

$\rm NH_3$	=	ammonia
CH <sub>4</sub>	=	methane
CO <sub>2</sub>	=	carbon dioxide
NO <sub>2</sub>	=	nitrogen dioxide
NO <sub>x</sub>	=	nitric oxides (= nitrogen dioxide + nitrogen monoxide)
$N_2O$	=	nitrous oxide (= laughing gas)
NMVOC	=	volatile organic compounds (not including methane)
S0 <sub>2</sub>	=	sulphur dioxide
$SF_6$	=	sulphur hexafluoride
PFCs	=	perfluorocarbons
HFCs	=	hydrofluorocarbons
$H_2O$	=	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 <sup>9</sup> J
TJ	=	terajoules	1 TJ	$= 10^{12} J$

PJ	=	petajoule	1 PJ	= 10 <sup>15</sup>	J
Kg	=	kilogram			
t	=	tonnes			
mn	=	million			
bn	=	billion			
MWh	=	megawatt hour			
h	=	hour			
m <sup>3</sup>	=	cubic metre			
%	=	per cent			
m²	=	square metre			
km <sup>2</sup>	=	square kilometre			
ha	=	hectare	1 ha	=	10 000 m <sup>2</sup>
t-km	=	ton-kilometre			
p-km	=	passenger-kilome	tre		
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
Х	=	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

### Chapter 1 Macroeconomic overview tables

The goal of Environmental-Economic Accounting is to describe in particular the interaction between the economy and the environment. The starting point are the national accounts, which are supplemented by the Environmental-Economic Accounting by the environmentally-relevant elements.

In the analysis of the state of the economy, a major role is played by the contribution of the production factors labour and capital to production. Environmental-Economic Accounting additionally includes the production inputs from the environment. This comprises not only material inputs (raw materials) from the environment, but also services from the environment such as the absorption of residuals and pollutants, and the provision of land on which to perform economic activities. A direct measurement of the input of services from the environment at macroeconomic level is currently possible neither in monetary nor in physical units. For this reason, this input is measured indirectly, i. e. approximately using the residuals and the volume of pollutants which are absorbed by the environment and the area used. Since the contribution made by the environment cannot be summarised in one single number, productivity figures for important individual elements of nature are formed. The services from the environment for economic purposes is as a rule a burden on the environment which is closely linked to a quantitative worsening of the state of the environment.

For the economic use of the following direct input factors in the production process and in consumption, volume trends and productivity figures are depicted in Environmental-Economic Accounting:

#### The environment as a source of resources

Energy	Energy consumption as consumption of primary energy (petajoules, [PJ])
Raw materials	Consumption of raw materials as withdrawal of abiotic raw materials used from the domesic environment plus imported abiotic goods (million tonnes)
Water withdrawal	Consumption of wate ras withdrawal of water from the environment (million m³)
The environment as a	a sink for residuals and pollutants
Greenhouse gases	Burden on the environment caused by the emissions of greenhouse gases, here: Carbon dioxide ( $CO_2$ ), Methane ( $CH_4$ ), Nitrous oxide ("laughing gas" $N_2O$ ), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulphur hexafluoride ( $SF_6$ ) and

	Nitrogen trifluoride (NF <sub>3</sub> ) (million tonnes CO <sub>2</sub> equivalents)
Air pollutants	Burden on the environment caused by the emission of Sulphur dioxide $(SO_2)$ , Nitrogen oxides $(NO_x)$ , Ammonia $(NH_3)$ , volatile organic compounds not including methane $(NMVOC)$ and particulate matter $(PM_{2.5})$ (1,000 tonnes)
Water discharge	Burden on the environment caused by the discharge of used water into the environment (million m <sup>3</sup> )

Waste Burden on the environment caused by the deposit of waste (1,000 tonnes)

#### Structural use of the environment

Land	Land use in the form of housing and transport area ( $km^2$ )

#### Use of economic factors

Labour	Volume of labour measured by hours worked (billion
hours)	
Capital	Use of capital as depreciation (Euro billion)

In order to analyse the links between the economy and the environment it is necessary both to present the absolute parameters and to assess further indicators through which the various parameters are interrelated. It is common practice in the economy to relate economic performance (gross value added) to the use of labour or capital as production factors. In the same way, in Environmental-Economic Accounting economic capacity is related to the individual volumes of environmental input factors measured in physical units. In this way, so-called productivities can be used as a measure of the efficiency of the use of various elements of the environment as a production factor.

# Productivity, Intensity – indicators on the efficiency of the use of factor input

The productivity of an input factor indicates how much economic capacity is produced with the use of a unit of this factor.

Productivity expresses how efficiently an economy uses the input of labour, capital and environmental inputs. For example, with an increase in gross domestic product and constant use of an input factor results in an productivity increase. These factors are not directly comparable with one another because of their different characteristics and functions. The analysis for longer periods may however indicate how the ratio of these factors changes to one another.

Furthermore, one should note that by calculating productivities in the way total output from the economic activity is exclusively related to the respective production factor, although the product is the result of the interaction of all production factors. The productivities ascertained can hence only serve as a rough aid to orientation.

At the level of industries gross value added is referred to in order to calculate the efficiency of factor utilisation. If the economic performance appears in the fraction as the denominator it is an "intensity figure", if the gross value added is in the numerator the ratio is a "productivity figure". For raw materials and energy the relevant (macroeconomic) productivity is used as an indicator within the context of the sustainable development strategy of the German Federal Government. Intensities are calculated in Environmental-Economic Accounting in order to facilitate comparison between the use of environmental factors of different sectors.

If productivity or intensity is observed for a longer period it is necessary to carry out a price adjustment of the monetary figures at current prices. Since 2005 the method of price adjustment has changed in the calculations of the national accounts. Following the revision of the SNA the previous fixed-price basis was abolished in favour of a previous year price basis. Data given in constant prices (e. g. "in 1995 prices") therefore belong to the past. Price-adjusted details in the national accounts since then have been provided in the form of chained data, in which volume indicators on a previous year price basis are linked to one another for a range of years and chained to a reference year. Price adjusted figures of gross value added of industries have been estimated for purposes of the Environmental-Economic Accounting.

Environmental data on private households has been compiled annually in a comprehensive way since 2006 in the sectoral reporting module "Private households and environment". Based on the results of Environmental-Economic Accounting and other official and unofficial data sources details are provided for consumer expenditure, housing area, energy use, carbon dioxide emissions, water and sewage water. Table 1.3 of the EEA table volume provides an overview of all the household related data.

The data presented is a result of various calculations within the material and energy flow accounts: the energy flow accounts, the water accounts, emission calculations, area survey and waste statistics. In special accounts for assessing energy use by private households by areas of application resource is made to parameters such as the number of private households. The level of private consumption expenditure (priceadjusted) is another important parameter both for direct use of environmental factors by private households and as a basic for determining indirect environmental use.

For tables 1.4 and 1.5 see notes in part 4 "Raw materials" (chapter 5).

Starting in 2002, the Federal Government already adopted a national sustainability strategy called "Perspektiven für Deutschland" (Perspectives for Germany). It has been fully revised and adapted to the Agenda 2030 of the United Nations and its 17 Sustainable Development Goals. In the 2016 German Sustainability Strategy report on progress made, the Federal Government described the challenges ahead which result from Germany's international responsibilities connected to a global sustainable development. In addition, related to that, it defined its tangible goals and named measures planned to reach each of these goals. Furthermore, directly linked to the sustainability strategy, the Federal Government specified a number of indicators with individual target values for each of them.

With a period of two years, the Federal Statistical Office published an Indicator Report (the 2016 version was published in January 2017). Therein the indicators are described and their development and target achievement are analysed. Compared to former versions, the 2016 Indicator Report has been markedly extended and restructured. Every single one of the now 63 indicators of the German Sustainability Strategy is presented by itself or together with another contextually closely related indicator. The development of an indicator is depicted in a graph and it is described in more detail in a text consisting of three sections. The first paragraph includes a short definition of the indicator. In the second paragraph, the political intention to choose the specific indicator is outlined together with the politically chosen target value. If need be, this target has been translated into a statistically measurable figure. The last paragraph focusses on the content and the development of the indicator. In the third section, the development of the indicator is looked at over its specific time period and from a statistical point view. There is a detailed description of what the indicator represents and which conclusions may be drawn from the indicator's figures and the changes in values. At the same time, a weather symbol is used to evaluate the success of the strategy. This assessment is based on the average historic pace of development and the status of the indicator in the target year, given a continued constant trend in development. Methodological explanations concerning the assessment system of the

target attainment and an attached collection of related tables complement the Indicator Report.

Extracted from the Indicator Report, table 1.6 depicts the time series of those 33 indicators of the German Sustainability Strategy which cover the environment and the economy. The time series are depicted in different dimensions: some are indexes with a variety of base years, depending on the indicator, some measures are in percent, some are physical and some are monetary. For a better transparency, some compound indicators like energy or raw material productivity are depicted by their separate components (e. g. by numerator and denominator).

The Indicator Report and the data compendium are available at DESTATIS: www.destatis.de/SustainableDevelopmentIndicators

### Chapter 2 Economic indices

The calculation of gross value added for industries was converted to the WZ 2008 (Classification of Economic Activities, 2008 edition). For homogeneous branches results at current prices are available for the years 2000 to 2009. For 2010 and 2012 gross value added was taken from the input-output tables. For the years 2013 and 2014 an estimate was made based on data for industries.

For the years 2000 to 2014 price-adjusted values for gross value added for homogeneous branches were calculated by means of a single deflator for the gross value added. The deflator was compiled with reference to total gross value added at current prices and total volume of gross value added. Volume data for individual homogeneous branches were calculated by dividing the figures on gross value added at current prices with the deflator of total gross value added.

# Glossary

Depreciation	Loss in value of fixed assets due to normal wear and out of economic reasons.
Domestic final consumption expenditure of households	Household final consumption expenditure consists of the expenditure, including expenditure whose value must be estimated indirectly, incurred by resident households on individual consumption goods and services, including those sold at prices that are not economically significant and including consumption goods and services acquired abroad.
Energy consumption	Energy consumption is the difference between the quantity of energy used in an economic sector and the quantity passed on by that sector to downstream sectors. Generally, the quantity of energy used is entirely consumed in the process of production and consumption activities of the sector (e.g. to run machines, equipment and vehicles or for room heating) and finally discharged into the environment in the form of heat.
Exports	Exports of goods and services consist of sales, barter, or gifts and grants, of goods and services from residents to non-residents.
Gross domestic product	The gross domestic product (GDP) is a measure of the economic performance of a national economy over a given period.
Gross value added	Gross Value Assed (GVA) describes the added value of goods produced in the production process (gross output minus intermediate consumption).
Homogeneous branches	Economic sectors in the input-output tables. Homogeneous branches are constructed in the input-output accounts by pure functional criteria. They are defined by the output of a certain commodity group. Homogeneous branches rely solely on the production of a certain commodity group and vice versa all of it is produced only by one homogeneous branch.
Housing and transport area	Housing and transport area includes the usage types of buildings and open land, commercial/industrial land (except mining), transport land, recreational land and cemeteries. 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.
Imports	Imports of goods and services consist of purchases, barter, or receipts of gifts or grants, of goods and services by residents from non-residents.
Primary energy consumption	Domestic primary energy consumption is calculated from the sum of all primary energy sources generated domestically and all imported energy sources less energy exports (and excluding offshore bunkering). In terms of use, this is equivalent to total energy used for energy purposes (final energy consumption and own consumption by energy sectors) and for non-energy purposes (e. g. in the chemical industry), losses incurred through domestic energy conversion, losses from flaring and distribution, as well as statistical differences reported in energy balance sheet.
Raw materials	In Environmental-Economic Accounts (EEA) raw materials are those materials are those materials occuring unprocessed by humans in the natural environment.
Raw material productivity	Raw material productivity expresses how much gross domestic product (in euros, adjusted for price changes) is obtained per tonne of abiotic primary material. The (non-renewable) raw materials withdrawn from the domestic environment – not counting agricultural and forestry products – as well as all imported abiotic materials (raw materials, semi-finished and finished products) are considered to be abiotic primary material.
Renewable energy	Renewables include, among others, hydropower, wind power on land and at sea, solar energy and geothermal energy, but also biomass such as biogenic solid fuels, biogas and biogenic wastes.

Resident concept	The resident concept is a concept used in the National Accounts and the Environmental Economic Accounting (EEA) for the recording of economic activities. In that concept the residents of a certain territory are determined as recording units. In the EEA this concept for example is used for the recording of energy consumption or air emissions.
Waste	Solid waste covers discarded materials that are no longer required by the owner or user.
Waste water	Waste water is used water, typically discarded into the sewage system. It contains matter and bacteria in solution or suspension.
Waste water discharged into nature	Water discharged into nature includes direct and indirect water discharge of industries and private households as well as water losses, evaporation and rain and infiltration water.
Withdrawal of water from nature	Withdrawal of water from nature is the direct abstraction of ground water, surface water or spring water and bank filtrate.

# Table 1.1: Population<sup>1</sup> and economy

		11	1001	1005	2000	2005
No.	Specification	Unit	1991	1995	2000	2005
1	Inhabitants 2	mn	80.0	81.3	81.5	81.3
2	Active population	mn	41.0	41.1	42.9	43.7
3	Persons in gainful employment (national concept)	mn	38.9	37.9	39.8	39.2
4	Unemployed	mn	2.2	3.2	3.1	4.5
5	in % of active population	%	5.3	7.8	7.3	10.3
6	Domestic final consumption expenditure of households at current prices	EUR bn	858	1,022	1,145	1,258
7	Domestic final consumption expenditure of households	Index 2005 = 100	85.6	90.6	98.1	100
8	Hours worked	bn hours	60.3	58.0	58.0	55.5
9	per person in gainful employment (domestic concept)	hours	1,554	1,528	1,452	1,411
10	Consumption of fixed capital at current prices	EUR bn	246.0	307.4	354.4	392.8
11	Consumption of fixed capital in 2005 prices	EUR bn	259.9	301.8	351.3	392.8
12	Gross domestic product total, price-adjusted, chain-linked index	Index 2005 = 100	84.0	88.4	97.2	100
13	per person in gainful employment (domestic concept)	Index 2005 = 100	85.2	91.6	95.8	100
14	per hour worked	Index 2005 = 100	77.4	84.6	93.1	100
15	per inhabitants	Index 2005 = 100	85.4	88.4	97.1	100
	Memorandum item:					
16	Persons in gainful employment (domestic concept)	mn	38.8	38.0	39.9	39.3

1 Annual averages are used for the data on population and employment.

2 Subject-matter series 18, series 4: National Accounts: Average population based on the 2011 Census (on 9th of May: 80,219,695 inhabitants).

## Table 1.1: Population<sup>1</sup> and economy

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	No.
2000	2007	2000	2009	2010	2011	2012	2019	2011	2019	2010	
81.2	81.0	80.8	80.5	80.3	80.3	80.4	80.6	81.0	81.7	82.5	1
43.7	43.7	43.8	43.9	43.8	43.9	44.2	44.4	44.7	44.9	45.3	2
39.6	40.3	40.8	40.8	41.0	41.5	42.0	42.3	42.6	43.0	43.5	3
4.1	3.5	3.0	3.1	2.8	2.4	2.2	2.2	2.1	2.0	1.8	4
9.4	7.9	6.9	7.1	6.4	5.5	5.0	4.9	4.7	4.3	3.9	5
1,294	1,314	1,343	1,340	1,373	1,419	1,455	1,472	1,503	1,539	1,578	6
101.8	101.6	102.1	102.4	103.0	104.4	105.6	105.8	107.0	109.0	111.1	7
56.5	57.4	58.0	56.1	57.0	57.9	57.8	57.7	58.3	58.9	59.3	8
1,425	1,424	1,418	1,373	1,390	1,393	1,375	1,363	1,367	1,368	1,359	9
402.8	423.0	440.3	450.8	459.7	475.5	492.3	506.2	520.6	536.1	552.3	10
400.1	409.3	419.2	425.8	430.5	436.7	443.6	449.3	455.1	462.1	470.0	11
103.7	107.1	108.2	102.2	106.3	110.2	110.8	111.3	113.5	115.4	117.7	12
102.9	104.4	104.2	98.2	101.9	104.3	103.6	103.4	104.6	105.4	106.0	13
101.9	103.5	103.7	101.0	103.5	105.6	106.3	107.1	107.9	108.7	110.2	14
103.9	107.5	109.0	103.2	107.7	111.7	112.0	112.3	114.0	114.9	116.0	15
39.6	40.3	40.9	40.9	41.0	41.6	42.1	42.3	42.7	43.1	43.6	16

				1001	4005	2005	2005	2007
No.	Specification	Unit	1990	1991	1995	2000	2005	2006
			Production fa					
1	Primary energy consumption (EB, domestic concept)		14,905	14,610	14,269	14,401	14,558	14,837
2 3	Extraction of raw materials and imports 2 Water withdrawal from nature 3	_	•	1,443 51,245	1,455 48,831	1,412 44,929	1,303	1,365
4	Greenhouse gases				1,168,097	1,101,196	1,107,442	1,127,115
5	including: CO2				986,805	957,248	980,811	1,004,697
6	N2O	1,000 t CO <sub>2</sub> equiv.			63,758	45,093	45,757	45,470
7	CH4	. 1,000 t CO <sub>2</sub> equiv.			88,187	73,713	57,549	54,269
8	HFCs				8,217	7,806	9,940	10,162
9	PFCs			•	2 087	959	839	671
10 11	SF6		•		284 5	179 9	146 34	142 28
11	S02		•	•	5	9	54	20
13	NOx	-			1,937	698	770	632
14	NMVOC	1,000 tonnes			2,414	2,059	2,034	2,007
15	NH3	. 1,000 tonnes			2,063	1,617	1,366	1,369
16	Water discharge into nature 4				680	700	682	686
17	including: waste water			51,041	48,642	44,766	-	-
18	Waste 5		•	43,962	40,756	37,356	-	-
19	Housing and transport area 6 Hours worked			354,179	365,421	406,663	331,876	372,906
20 21	Hours worked Consumption of fixed capital at current prices			60.3	- 58.0	43,939 58.0	46,050 55.5	46,436 56.5
21	Consumption of fixed capital a current prices		•	246	307	354	393	403
23	memorandum item:		•	260	302	351	393	400
	Renewable sources of energy							
24	Share of primary energy consumption	. %	2.0	-	2.2	3.7	7.2	8.1
25	Share of electricity consumption		3.4	3.1	4.7	6.2	10.2	11.6
26	Gross domestic product at current prices			1,580	1,899	2,116	2,301	2,393
27	Gross domestic product, price-adjusted	Index 2005 = 100	•	84.0	88.4	97.2	100.0	103.7
			Index					
28	Primary energy consumption (EB, domestic concept)		100	98.0	95.7	96.6	97.7	99.5
29		2005 = 100	102.4	100.4	98.0	98.9	100	101.9
30 31	Extraction of raw materials and imports 2	. 1994 = 100 2005 = 100	•	95.3 110.8	96.1 111.7	93.2 108.4	86.0 100	90.1 104.8
32	Water withdrawal from nature 3			110.8	108.7	108.4		
33	Greenhouse gases		-		100	94.3	94.8	96.5
34	-	2005 = 100	-	-	105.5	99.4	100	101.8
35	including: CO2	. 1995 = 100	-	-	100	97.0	99.4	101.8
36		2005 = 100	-	-	100.6	97.6	100	102.4
37	N20		-	-	100	70.7	71.8	71.3
38 39	<u>(14</u>	2005 = 100	-	-	139.3	98.5	100	99.4
59 40	СН4	1995 = 100 2005 = 100	-	-	100 153.2	83.6 128.1	65.3 100	61.5 94.3
40	HFCs		-		100	95.0	121.0	94.5 123.7
42		2005 = 100	-	-	82.7	78.5	100	102.2
43	PFCs	1995 = 100	-	-	100	45.9	40.2	32.1
44		2005 = 100	-	-	248.7	114.2	100	79.9
45	SF6	1995 = 100	-	-	100	63.0	51.3	50.1
46		2005 = 100	-	-	194.8	122.7	100	97.6
47	NF3			-	100	168.6	652.0	526.3
48 49	Air pollutants	2005 = 100	-	-	15.3	25.9	100	80.7
49 50	S02		-		100	36.0	39.8	32.6
51		2005 = 100			251.4	90.6	100	82.0
52	NOx	1995 = 100			100	85.3	84.3	83.1
53		2005 = 100	-	-	118.7	101.2	100	98.6
54	NMVOC			-	100	78.4	66.2	66.4
55	NU12	2005 = 100		-	151.1	118.4	100	100.3
56	NH3			-	100	102.9	100.3	101.0
57 58	Water discharge into nature 4	2000 = 100 . 2000 = 100	-	-	99.7 108.7	102.7 100	100	100.7
58 59	Water discharge into nature 4 including: waste water			114.0 117.7	108.7 109.1	100 100	_	_
60	Waste 5					105.5	86.1	96.8
61		2005 = 100		91.9		122.5	100	112.4
62	Housing and transport area 6					109.0	114.3	115.2
63		2005 = 100				95.4	100	100.8
64	Hours worked	1991 = 100		100	96.2	96.2	92.1	93.7
65		2005 = 100		108.6	104.5	104.4	100	101.7
66	Consumption of fixed capital in 2005 prices			100	116.1	135.2	151.1	153.9
67 68	Gross domestic product price adjusted (shein linked index)	2005 = 100 1991 = 100		66.2 100	76.8	89.4 115 7	100	101.9
68 69	Gross domestic product, price-adjusted (chain-linked index)	1991 = 100 2005 = 100		100 84.0	105.2 88.4	115.7 97.2	119.0 100	123.4 103.7
09		2003 - 100	•	04.0	00.4	31.2	100	103.7

2007	2008	2009	2010	2011	2012	2013	2014 <sup>1</sup>	2015 <sup>1</sup>	2016 <sup>1</sup>	
Produktion fa	actors									+
14,197	14,380	13,531	14,217	13,599	13,447	13,822	13,180	13,234	13,383	
1,344	1,326	1,212	1,251	1,332	1,274	1,284	1,298	1,287		
37,747	-	-	38,104	-	-	29,686	-	-		
,121,527	1,133,903	1,064,322	1,115,541	1,092,467	1,088,968	1,109,240	1,066,122	1,069,502		
999,230	1,012,068	945,221	1,005,556	982,063	978,581	998,830	956,036	958,933		
47,602	48,176	47,269	38,943	40,346	39,537	40,136	40,799	41,343		
52,338	51,548	49,670	48,963	48,018	48,558	48,046	47,068	46,741		
10,448	10,589	11,170	10,753	10,953	11,140	11,096	11,183	11,356		
589	568	407	346	279	243	257	235	254		
139	130	128	136	139	138	143	149	156		
12	30	29	61	61	35	16	20	12		
692	720	613	560	524	532	527	501	498		
2,085	2,066	1,868	1,905	1,813	1,839	1,854	1,777	1,770		
1,320	1,271	1,162	1,279	1,186	1,167	1,155	1,076	1,083		
687	696	714	685	727	708	733	740	762		
37,626	-	-	37,984	-	-	29,582	-	-		
30,473	-	-	30,741	-	-	23,143	-	-		
386,946	382,818	359,387	373,011	386,690	380,576	385,729	400,953	402,229		
46,789	47,137	47,422	47,702	48,133	48,368	48,597	48,910	49,066		
57.4	58.0	56.1	57.0	57.9	57.8	57.7	58.3	58.9	59.3	
423	440	451	460	476	492	506	521	536	552	
409	419	426	430	437	444	449	455	462	470	
	- ·				. =					1
9.7	9.1	10.1	11.1	12.2	13.1	13.2	13.8	14.7	14.6	
14.2	15.1	16.3	17.0	20.3	23.5	25.1	27.3	31.5	31.7	
2,513	2,562	2,460	2,580	2,703	2,758	2,826	2,932	3,044	3,144	
107.1	108.2	102.2	106.3	110.2	110.8	111.3	113.5	115.4	117.7	
Index										
95.2	96.5	90.8	95.4	91.2	90.2	92.7	88.4	88.8	89.8	
97.5	98.8	92.9	97.7	93.4	92.4	94.9	90.5	90.9	91.9	
88.7	87.5	80.0	82.6	87.9	84.1	84.8	85.7	84.9		
			96.0							
103.1	101.7	93.0		102.2	97.8	98.6	99.6	98.7		
84.0	-	-	84.8	-	-	66.1	-	-		
96.0	97.1	91.1	95.5	93.5	93.2	95.0	91.3	91.6		
101.3	102.4	96.1	100.7	98.6	98.3	100.2	96.3	96.6		
101.3	102.6	95.8	101.9	99.5	99.2	101.2	96.9	97.2		
101.9	103.2	96.4	102.5	100.1	99.8	101.8	97.5	97.8		
74.7	75.6	74.1	61.1	63.3	62.0	63.0	64.0	64.8		
104.0	105.3	103.3	85.1	88.2	86.4	87.7	89.2	90.4		
59.3	58.5	56.3	55.5	54.4	55.1	54.5	53.4	53.0		
90.9	89.6	86.3	85.1	83.4	84.4	83.5	81.8	81.2		
127.1	128.9	135.9	130.9	133.3	135.6	135.0	136.1	138.2		
105.1	106.5	112.4	108.2	110.2	112.1	111.6	112.5	114.2		
28.2	27.2	19.5	16.6	13.4	11.6	12.3	11.2	12.2		
70.2	67.6	48.5	41.2	33.2	28.9	30.6	27.9	30.2		
49.2	45.9	45.2	47.9	48.9	48.8	50.4	52.5	55.1		
95.8	89.5	88.1	93.4	95.3	95.0	98.2	102.3	107.3		
227.3	559.5	549.8	1161.4	1157.1	665.6	303.0	383.4	224.7		
34.9	85.8	84.3	178.1	177.5	102.1	46.5	58.8	34.5		
	55.0	5.05				,0.5	2010			
35.7	37.2	31.6	28.9	27.1	27.5	27.2	25.8	25.7		
89.9	93.5	79.6	72.7	68.1	69.1	68.4	65.0	64.6		
86.4	85.6	77.4	78.9	75.1	76.2	76.8	73.6	73.3		
102.5	101.6	91.8	93.7	89.1	90.4	91.1	87.4	87.0		
64.0	61.6	56.3	62.0	57.5	56.6	56.0	52.1	52.5		
96.7	93.0	85.1	93.7	86.8	85.5	84.6	78.8	79.3		
101.0	102.3	105.0	100.7	106.9	104.1	107.7	108.9	112.1		
100.7	102.1	104.7	100.5	106.6	103.9	107.5	108.6	111.8		
84.0	-	_	84.9	_	_	66.1	_	_		
81.6	_	_	82.3	_	_	62.0	_	_		
				-				-		
100.4	99.4	93.3	96.8	100.4	98.8	100.1	104.1	104.4		
116.6	115.3	108.3	112.4	116.5	114.7	116.2	120.8	121.2		
116.1	117.0	117.7	118.4	119.4	120.0	120.6	121.3	121.7		
101.6	102.4	103.0	103.6	104.5	105.0	105.5	106.2	106.5		
95.3	96.2	93.1	94.6	96.1	96.0	95.7	96.8	97.8	98.4	
103.5	104.4	101.1	102.7	104.3	104.2	103.9	105.1	106.2	106.8	
157.5	161.3	163.8	165.6	168.0	170.7	172.9	175.1	177.8	180.8	
104.2	106.7	108.4	109.6	111.2	112.9	114.4	115.9	117.6	119.6	
127.5	128.8	121.6	126.6	131.2	131.8	132.5	135.0	137.4	140.1	
107.1	108.2	102.2	106.3	110.2	110.8	111.3	113.5	115.4	117.7	

No.	Specification	Unit	1990	1991	1995	2000	2005	2006
			Gross domest	ic product relation	to production fact	ors		
70	Primary energy consumption (EB, domestic concept)	2005 = 100		83.7	90.2	98.3	100	101.8
71		1990 = 100	100	104.5	112.5	122.6	124.8	127.0
72	Extraction of raw materials and imports 2	2005 = 100		75.8	79.2	89.7	100	99.0
73		1994 = 100		101.5	105.9	120.0	133.8	132.4
74	Water withdrawal from nature 3	1991 = 100		100	110.4	132.0	-	-
75		2000 = 100		75.8	83.7	100	-	-
76	Greenhouse gases	1995 = 100			100	116.6	119.3	121.6
77		2005 = 100			83.8	97.8	100	101.9
78	including: CO2	1995 = 100	•		100	113.4	113.8	115.2
79		2005 = 100	•	•	87.9	99.6	100	101.2
80	N20	1995 = 100			100	155.5	157.6	164.5
81		2005 = 100	•	•	63.4	98.6	100	104.4
82	CH4	1995 = 100	•		100	131.5	173.3	190.6
83		2005 = 100	•	•	57.7	75.9	100	110.0
84	HFCs	1995 = 100	•		100	115.7	93.5	94.9
85		2005 = 100	•		106.9	123.8	100	101.4
86	PFCs	1995 = 100	•		100	239.4	281.3	365.0
87		2005 = 100	•		35.6	85.1	100	129.8
88	SF6				100	174.6	220.4	234.0
89		2005 = 100			45.4	79.2	100	106.2
90	NF3		•	•	100	65.2	17.3	22.3
91		2005 = 100			576.4	376.0	100	128.5
92	Air pollutants	1995 = 100			100	153.7	165.4	177.3
93		2005 = 100			60.5	92.9	100	107.2
94	502				100	305.0	284.4	359.8
95		2005 = 100			35.2	107.2	100	126.5
96	NOx			•	100	128.9	134.2	141.1
97		2005 = 100			74.5	96.0	100	105.1
98	NMVOC				100	140.3	170.9	176.7
99		2005 = 100			58.5	82.1	100	103.4
100	NH3			•	100	106.8	112.8	116.2
101		2005 = 100			88.6	94.7	100	103.0
102	Water discharge into nature 4	1991 = 100	•	100.0	110.4	131.9	-	-
103		2000 = 100		75.8	83.7	100	-	-
104	including: waste water	1991 = 100	•	100.0	113.5	136.2	-	-
105		2000 = 100	•	73.4	83.4	100	-	-
106	Waste 5		•	•	•	103.3	130.3	120.2
107		2005 = 100		•		79.3	100	92.3
108	Housing and transport area 6			•		104.1	102.2	105.1
109		2005 = 100		•		101.9	100	102.8
110	Hours worked			100.0	109.3	120.3	129.2	131.7
111		2005 = 100		77.4	84.6	93.1	100	101.9
112	Consumption of fixed capital in 2005 prices	1991 = 100		100.0	90.6	85.6	78.8	80.2
113		2005 = 100		127.0	115.1	108.7	100	101.8

1 Some values estimated.

2 Used withdrawal of abiotic raw materials and imported abiotic goods.

3 Including infiltration and rain water.

4 Including infiltration and rain water, loss occuring with water distribution and evaporation.

5 The comparison of the results from 1996 onwards with earlier results is only partially possible because of the conversion of the primary statistics.

Until 2005 calculation based on net principle, since 2006 calculation according to the gross principle.

6 The reference data is 31.12. The data for 1997, 1998 and 1999 are based on a project by the Federal Office for Building and Regional Planning.

2007	2008	2009	2010	2011	2012	2013	2014 <sup>1</sup>	2015 <sup>1</sup>	2016 <sup>1</sup>	Ν
iross domesti	ic product relation	to production facto	rs	I		1		I		T
109.8	109.6	109.9	108.9	118.0	119.9	117.2	125.3	127.0	128.0	
137.0	136.7	137.2	135.9	147.2	149.6	146.3	155.9	157.9	158.9	
103.9	106.4	109.9	110.8	107.8	113.3	112.9	113.9	116.9		
139.0	142.3	147.0	148.2	144.2	151.5	151.1	152.4	156.4		
173.0	-	-	170.2	-	-	228.7	-	-		
131.1	-	-	129.0	-	-	173.3	-	-		
126.2	126.1	126.8	125.9	133.3	134.4	132.6	140.6	142.6		
105.7	105.7	106.3	105.6	111.7	112.6	111.1	117.8	119.5		
119.6	119.4	120.6	118.0	125.3	126.3	124.4	132.5	134.4		
105.1	104.9	106.0	103.7	110.1	111.0	109.3	116.4	118.1		
162.2	162.0	155.9	196.9	197.0	202.1	200.0	200.6	201.4		
102.9	102.8	98.9	124.9	125.0	128.2	126.9	127.2	127.8		
204.1	209.5	205.2	216.6	229.0	227.6	231.1	240.5	246.4		
117.7	120.8	118.4	125.0	132.1	131.3	133.3	138.7	142.1		
95.3	95.0	85.0	91.9	93.5	92.4	93.2	94.3	94.5		
101.9	101.6	90.9	98.3	100.0	98.8	99.7	100.8	101.0		
429.0	450.3	592.4	725.9	933.0	1078.1	1021.6	1141.9	1074.5		
152.5	160.1	210.6	258.0	331.7	383.3	363.2	405.9	382.0		
246.3	266.5	255.6	250.9	254.9	256.8	249.7	244.4	237.1		
111.8	120.9	116.0	113.9	115.7	116.6	113.3	110.9	107.6		
53.3	21.9	21.0	10.4	10.8	18.8	41.5	33.5	58.1		
307.2	126.1	121.2	59.7	62.1	108.5	239.5	193.0	335.0		
179.6	182.8	188.2	192.6	208.1	209.3	209.3	222.4	225.2		
108.6	110.5	113.8	116.5	125.8	126.5	126.5	134.5	136.2		
338.9	329.4	365.2	416.0	460.5	456.1	462.9	496.6	508.0		
119.1	115.8	128.4	146.3	161.9	160.3	162.7	174.6	178.6		
140.3	143.1	149.4	152.4	166.0	164.5	163.9	174.3	178.1		
104.5	106.6	111.3	113.5	123.7	122.5	122.1	129.8	132.6		
189.3	198.8	205.1	194.0	216.9	221.4	224.9	246.2	248.8		
110.8	116.3	120.0	113.5	126.9	129.6	131.6	144.1	145.6		
119.9	119.6	110.1	119.4	116.7	120.3	116.9	117.9	116.5		
106.3	106.0	97.6	105.8	103.4	106.6	103.6	104.5	103.2		
172.9	-	-	170.1	-	-	228.6	-	-		
131.1	-	-	128.9	-	-	173.3	-	-		
183.9	-	-	181.0	-	-	251.7	-	-		
135.0	-	-	132.9	-	-	184.8	-	-		
119.6	122.2	122.9	123.2	123.2	125.8	124.8	122.3	124.1		
91.8	93.8	94.3	94.6	94.6	96.6	95.8	93.9	95.2		
107.7	108.1	101.4	104.9	107.8	107.8	107.8	109.2	110.7		
105.4	105.7	<i>99.2</i>	102.6	105.4	105.5	105.5	106.8	108.3		
133.7	134.0	130.5	133.8	136.5	137.4	138.4	139.5	140.5	142.4	
103.5	103.7	101.0	103.5	105.6	106.3	107.1	107.9	108.7	110.2	
80.9	79.9 101.4	74.2 94.2	76.4 97.0	78.1 99.1	77.3 98.1	76.6	77.1	77.3	77.5	1

No.	Specification	Unit	1990	1991	1995	2000	2005
			Production	factors			
1	Inhabitants 1 of private households (reference data 31.12.)	1,000		80,275	81,817	82,260	82,438
2	Number of households (reference data 31.12.) 1	1,000		35,367	37,024	38,207	39,178
3	Housing area (reference data 31.12.)	km <sup>2</sup>		-	-	13,457	-
4	Residential area used	km <sup>2</sup>		-	-	9,309	-
5	Living space (reference data 31.12.)	mn m <sup>2</sup>		2,771	2,955	3,234	3,416
6	Flats (reference data 31.12.) 2	1,000	33,856	34,174	35,954	38,384	39,551
7	Domestic final consumption of households (current prices)	EUR mn		857,850	1,021,579	1,144,713	1,258,469
8	Domestic final consumption of households (price-adjusted)	Index (2005=100)		85.6	90.6	98.1	100.0
	including:						
9	Actual rent (current prices)	EUR mn		50,112	77,454	92,166	99,469
10	Imputet rent (Current prices)	EUR mn		58,040	86,786	103,517	117,483
11	Actual rent (price-adjusted)	Index (2005=100)		75.7	89.6	98.0	100.0
12	Imputet rent (price-adjusted)	Index (2005=100)		72.5	85.1	93.1	100.0
13	Use of water	mn m <sup>3</sup>		3,550	3,313	3,233	_
14	including: water withdrawal from nature	mn m <sup>3</sup>		83	47	32	_
15	including: water received from other industries	mn m <sup>3</sup>		3,467	3,266	3,200	_
16	Water consumption per inhabitants	m <sup>3</sup>		43	40	39	_
17	Energy consumption	petajoule		3,635	3,944	4,147	3,911
18	including: energy consumption for mobility	petajoule	1,247	1,326	1,392	1,384	1,409
19	including: energy consumption for housing	petajoule	1,24/	2,309	2,551	2,763	2,501
20		. ,					
20	memorandum item: energy consumption for housing	petajoule		2,436	2,655	2,584	2,591
21 22	Energy consumption per inhabitants	terajoule	· ·	45	48	50	47
	Energy consumption per households	terajoule	•	103	107	109	100
23	Energy consumption relevant to emissions	petajoule		3,159	3,341	3,296	3,277
24	including: energy consumption relevant to emissions for mobility	petajoule	1,247	1,326	1,392	1,384	1,409
25	including: energy consumption relevant to emissins for housing	petajoule	•	1,833	1,949	1,912	1,868
26	Emissions of carbon dioxide	mn tonnes			236	233	230
27	including: emissions of carbon dioxide for mobility	mn tonnes			102	101	104
28	including: emissions of carbon dioxide for housing	mn tonnes			134	131	126
29	N20	1,000 tonnes		•	7	6	4
30	СН4	1,000 tonnes		•	86	70	63
31	S02	1,000 tonnes			167	81	49
32	NOx	1,000 tonnes			686	567	432
33	NMVOC	1,000 tonnes			999	749	356
34	NH3	1,000 tonnes			20	32	25
35	Waste water total	mn m <sup>3</sup>		3,349	3,176	3,284	-
36	including: waste water directly discharged	mn m <sup>3</sup>		274	246	205	_
37	including: waste water indirectly discharged	mn m <sup>3</sup>		3,075	2,930	3,079	-
			Index				
38	Inhabitants of private households (reference data 31.12.)	2005 = 100		97.4	<i>99.2</i>	99.8	100
39	Number of households (reference data 31.12.)	2005 = 100		90.3	94.5	97.5	100
40	Housing area (reference data 31.12.)	2000 = 100		-	-	100	-
41	Residential area used	2000 = 100		-	-	100	-
42	Living space (reference data 31.12.)	2005 = 100		81.1	86.5	94.7	100
43	Flats (reference data 31.12.)	2005 = 100	85.6	86.4	90.9	97.0	100
44	Domestic final consumption of households (current prices)	2005 = 100		68.2	81.2	91.0	100
45	Domestic final consumption of households (price-adjusted)	2005 = 100		85.6	90.6	98.1	100
	including:						
46	Actual rent (current prices)	2005 = 100		50.4	77.9	92.7	100
47	Imputet rent (Current prices)	2005 = 100		49.4	73.9	88.1	100
48	Actual rent (price-adjusted)	2005 = 100	· ·	75.7	89.6	98.0	100
49	Imputet rent (price-adjusted)	2005 = 100	· ·	73.7	89.8 85.1	98.0 93.1	100
50		2000 = 100					100
51	Use of water including: water withdrawal from nature	2000 = 100 2000 = 100		109.8 256 3	102.5	100 100	-
52	-	2000 = 100 2000 = 100	· ·	256.3	145.2		-
	including: water received from other industries		•	108.3	102.1	100	-
53 54	Water consumption per inhabitants	2000 = 100	· ·	111.0	102.6	100	-
54 55	Energy consumption	2005 = 100		93.0	100.8	106.1	100
55	including: energy consumption for mobility	2005 = 100	88.5	94.1	<i>98.8</i>	98.2	100
56	including: energy consumption for housing	2005 = 100	· ·	92.3	102.0	110.5	100
57	Energy consumption per inhabitants	2005 = 100	· ·	95.5	101.6	106.3	100
58	Energy consumption per households	2005 = 100	· ·	103.0	106.7	108.8	100
59	Energy consumption relevant to emissions	2005 = 100	· ·	96.4	101.9	100.6	100
60	including: energy consumption relevant to emissions for mobility	2005 = 100	88.5	94.1	98.8	98.2	100
61	including: energy consumption relevant to emissins for housing	2005 = 100		98.1	104.3	102.4	100
62	Emissions of carbon dioxide	2005 = 100	· ·		102.6	101.1	100
63	including: emissions of carbon dioxide for mobility	2005 = 100			98.3	97.7	100
64	including: emissions of carbon dioxide for housing	2005 = 100			106.2	103.8	100
65	Waste water total	2000 = 100	· .	102.0	96.7	100	-
	including: waste water directly discharged	2000 = 100	1	133.7	120.2	100	-
66	including. waste water directly discharged						

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
Produktion fa	ctors			-	-	-				-	T
82,315	82,218	82,002	81,802	81,752	80,328	80,524	80,768	81,198	82,176	82,457	
39,767	39,722	40,076	40,189	40,301	39,510	39,707	39,933	40,222	40,773	40,959	
-	-	15,430	-	-	-	-	-	-	-	-	
_	_	10,201	_	_	_	_	_	_	_	_	
3,446	3,473	3,494	3,513	3,530	3,551	3,571	3,592	3,615	3,640	3,665	
39,754	39,918	40,057	40,184	41,223	40,630	40,806	40,995	41,221	41,446	41,703	
294,263	1,314,268	1,343,244	1,340,434	1,372,877	1,418,510	1,455,255	1,472,436	1,502,748	1,539,191	1,577,770	
101.8	101.6	102.1	102.4	103.0	104.4	105.6	105.8	107.0	109.0	111.1	
100 752	102,007	103,274	104,307	105,368	106,701	108,051	109,584	111 250	112,986	114,558	
100,753								111,358			
120,160	122,870	125,575	127,977	130,518	133,677	136,795	141,109	146,178	150,026	153,735	
100.2	100.2	100.2	100.1	100.1	100.1	100.1	100.2	100.1	100.3	100.5	
101.1	102.1	103.2	104.1	105.0	106.3	107.4	109.5	111.5	113.0	114.4	
-	3,103	-	-	3,004	-	-	2,967	-	-		
-	28	-	-	23	-	-	24	-	-		
-	3,075	-	-	2,981	-	-	2,943	-	-		
-	37	-	-	36	-	-	36	-	-		
3,876	3,821	3,816	3,812	3,777	3,804	3,695	3,814	3,666	3,704		
1,367	1,359	1,326	1,348	1,352	1,366	1,347	1,359	1,356	1,345		
2,508	2,462	2,491	2,464	2,425	2,438	2,348	2,456	2,310	2,359	 2,424	
											1
2,622	2,259	2,558	2,478	2,676	2,333	2,427	2,556	2,188	2,302	2,394	
47	46	47	47	46	47	46	47	45	45		
97	96	95	95	94	96	93	96	91	91		
3,273	2,912	3,169	3,111	3,286	3,009	3,062	3,187	2,864	2,960		
1,367	1,359	1,326	1,348	1,352	1,366	1,347	1,359	1,356	1,345		
1,906	1,553	1,843	1,763	1,934	1,643	1,715	1,828	1,508	1,615		
231	205	224	220	234	215	217	226	203	209		
101	100	98	101	101	102	101	101	101	102		
130	105	125	119	133	113	116	124	102	107		
4	3	3	3	4	4	3	4	3	3		
62	59	61	61	71	65	59	60	53	55		
53	37	48	35	38	30	20	17	14	15		
414	372	342	312	311	291	287	288	275	276		
353	332	308	304	349	310	293	299	278	278		
25	23	22	21	19	18	17	16	16	15		
-	3,182	-	-	3,086	_	_	3,068	_	_		
_	203	-	-	202	_	_	219	_	_		
_	2,979	-	-	2,884	_	_	2,848	_	_		
Index	_,,,,			_,			_,				
99.9	99.7	99.5	99.2	99.2	97.4	97.7	98.0	98.5	99.7		
101.5	101.4	102.3	102.6	102.9	100.8	101.4	101.9	102.7	104.1		
-	-	114.7	-	-	-	-	-	-	-		
-	-	109.6	-	-	-	-	-	-	-		
100.9	101.7	102.3	102.8	103.4	103.9	104.5	105.2	105.8	106.6		
100.5	100.9	101.3	101.6	104.2	102.7	103.2	103.7	104.2	104.8		
102.8	104.4	106.7	106.5	109.1	112.7	115.6	117.0	119.4	122.3		
101.8	101.6	102.1	102.4	103.0	104.4	105.6	105.8	107.0	109.0		1
											1
101.3	102.6	103.8	104.9	105.9	107.3	108.6	110.2	112.0	113.6		
102.3	104.6	106.9	108.9	111.1	113.8	116.4	120.1	124.4	127.7		
100.2	100.2	100.2	100.1	100.1	100.1	100.1	100.2	100.1	100.3		
101.1	102.1	103.2	104.1	105.0	106.3	107.4	109.5	111.5	113.0		
-	96.0	-	-	92.9	_	-	91.8	-	-		
_	87.1	_	_	71.0	_	_	73.5	_	_		
_	96.1	_	_	93.2	_	_	92.0	_	_		
	96.1		_	93.7			92.0 93.7	_	_		
-		-			-	-					
99.1	97.7	97.6	97.5	96.6	97.3	94.5	97.5	93.7	94.7		
97.0	96.4	94.1	95.6	95.9	96.9	95.6	96.4	96.2	95.5		
100.3	98.4	99.6	98.5	96.9	97.5	93.9	98.2	92.4	94.3		
99.3	98.0	98.1	98.2	97.4	99.8	96.7	99.6	95.2	95.0		
97.6	96.4	95.4	95.0	93.9	96.5	93.2	95.7	91.3	91.0		
99.9	88.8	96.7	94.9	100.3	91.8	93.4	97.2	87.4	90.3		
97.0	96.4	94.1	95.6	95.9	96.9	95.6	96.4	96.2	95.5		
102.0	83.1	98.7	94.4	103.5	88.0	91.8	97.9	80.7	86.4		
102.0											
	89.0	97.2	95.7	101.6	93.5	94.2	98.1	88.3	90.6		1
97.1	96.7	94.8	97.1	97.3	98.3	97.1	97.8	97.4	98.0		1
102.9	82.8	99.1	94.5	105.0	89.5	91.8	98.3	80.8	84.5		
-	96.9	-	-	94.0	-	-	93.4	-	-		
											1
-	98.9	-	-	98.4	-	-	107.2	-	-		

No.	Specification	Unit	1990	1991	1995	2000	2005
			Factors in relat		nal consumption e usted)	xpenditure (price-	
68	Actual rent (price-adjusted)	2005 = 100		88.5	98.9	99.9	100
69	Imputet rent (price-adjusted)	2005 = 100		84.7	93.9	94.9	100
70	Use of water			125.9	111.0	100	_
71	including: water withdrawal from nature	2000 = 100		293.9	157.2	100	-
72	including: water received from other industries	2000 = 100		124.2	110.5	100	-
73	Water consumption per inhabitants			127.3	111.1	100	_
74	Energy consumption	2005 = 100		108.7	111.3	108.1	100
75	including: energy consumption for mobility	2005 = 100		110.0	109.0	100.1	100
76	including: energy consumption for housing	2005 = 100		107.9	112.6	112.6	100
77	Energy consumption per inhabitants	2005 = 100		111.6	112.1	108.3	100
78	Energy consumption per households	2005 = 100		120.4	117.8	110.9	100
79	Energy consumption relevant to emissions	2005 = 100		112.7	112.5	102.5	100
80	including: energy consumption relevant to emissions for mobility			110.0	109.0	100.1	100
81	including: energy consumption relevant to emissins for housing	2005 = 100		114.7	115.1	104.3	100
82	Emissions of carbon dioxide	2005 = 100			113.3	103.0	100
83	including: emissions of carbon dioxide for mobility	2005 = 100			108.5	99.6	100
84	including: emissions of carbon dioxide for housing	2005 = 100			117.2	105.8	100
85	Waste water total	2000 = 100		116.9	104.7	100	-
86	including: waste water directly discharged	2000 = 100		153.4	130.2	100	-
87	including: waste water indirectly discharged			114.5	103.0	100	-
			Factors in r		ld final consumptic nt prices)	on expenditure	
88	line of water	2000 100				100	
89	Use of water			146.5	114.8	100	-
89 90	including: water withdrawal from nature			342.0	162.6	100	-
90 91	including: water received from other industries			144.6	114.4	100	-
91 92	Water consumption per inhabitants			148.1	115.0	100	-
92 93	Energy consumption			136.4	124.2	116.6	100
93 94	including: energy consumption for mobility			138.1	121.7	108.0	100
	including: energy consumption for housing		•	135.4	125.7	121.5	100
95	Energy consumption per inhabitants		•	140.0	125.2	116.8	100
96 07	Energy consumption per households			151.1	131.5	119.6	100
97	Energy consumption relevant to emissions		•	141.4	125.6	110.6	100
98	including: energy consumption relevant to emissions for mobility		•	138.1	121.7	108.0	100
99	including: energy consumption relevant to emissins for housing			143.9	128.5	112.5	100
100	Emissions of carbon dioxide		•	•	126.4	111.1	100
101	including: emissions of carbon dioxide for mobility				121.1	107.4	100
102	including: emissions of carbon dioxide for housing				130.8	114.1	100
103	Waste water total			136.1	108.4	100	-
104	including: waste water directly discharged			178.5	134.7	100	-
105	including: waste water indirectly discharged	. 2000 = 100		133.3	106.6	100	-

1) Population projections based on the 1987 census (West) and 1990 (East) - Technical Series 1, Series 1.3 - 2011 (reporting date 31.12 of the year);

2012: population projections based on the census of 2011.

2) Housing stock in Germany - apartments in residential and non-residential buildings: Fachserie 5, Series 3, 2012; Results for 2010 on basis

of the census of building and housing 2011 (Status as of 31.05.2013).

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
actors in relat	ion to household f	inal consumption	expenditure (price	-adjusted)		1	I	1		
98.4	98.6	98.1	97.8	97.1	95.9	94.8	94.7	93.5	92.0	
99.4	100.5	101.0	101.6	101.9	101.8	101.8	103.5	104.2	103.6	
-	92.7	-	-	88.5	_	-	85.1	_	-	
-	84.0	-	-	67.6	_	-	68.2	_	-	
-	92.8	-	-	88.7	-	-	85.3	-	-	
-	92.8	-	-	89.3	-	-	86.9	-	-	
97.4	96.1	95.6	95.2	93.7	93.2	89.5	92.2	87.6	86.9	
95.4	94.9	92.1	93.4	93.1	92.9	90.5	91.2	89.9	87.6	
98.6	96.9	97.5	96.2	94.1	93.4	88.9	92.8	86.3	86.5	
97.5	96.4	96.1	95.9	94.5	95.7	91.6	94.1	89.0	87.2	
96.0	94.8	93.4	92.8	91.1	92.4	88.3	90.5	85.4	83.5	
98.2	87.4	94.7	92.7	97.3	88.0	88.5	91.9	81.7	82.8	
95.4	94.9	92.1	93.4	93.1	92.9	90.5	91.2	89.9	87.6	
100.3	81.8	96.6	92.1	100.5	84.3	87.0	92.5	75.5	79.3	
98.5	87.6	95.2	93.4	98.6	89.6	89.2	92.7	82.6	83.1	
95.4	95.2	92.9	94.8	94.4	94.2	91.9	92.4	91.1	89.9	
101.1	81.4	97.0	92.2	102.0	85.8	87.0	92.9	75.6	77.5	
-	93.5	-	-	89.5	-	-	86.7	-	-	
-	95.5	-	-	93.7	-	-	99.4	-	_	
-	93.4	-	-	89.2	-	-	85.8	-	-	
actors in relat	ion to household f	inal consumption	expenditure (curre	nt prices)						
_	83.6	_	_	77.5	_	_	71.4	_	_	
_	75.8	_	_	59.2	_	_	57.2	_	_	
_	83.7	_	_	77.7	_	_	71.5	_	_	
-	83.7	-	-	78.2	-	-	72.8	-	_	
96.4	93.5	91.4	91.5	88.5	86.3	81.7	83.4	78.5	77.5	
94.3	92.3	88.1	89.8	87.9	86.0	82.6	82.4	80.6	78.0	
97.5	94.2	93.3	92.5	88.9	86.5	81.2	83.9	77.3	77.1	
96.5	93.8	91.9	92.2	89.3	88.6	83.6	85.1	79.7	77.7	
20.5	92.3	89.4	89.2	86.1	85.6	80.6	81.8	76.5	74.4	
94.9	22.5			91.9	81.5	80.8	83.1	73.2	73.8	
	85.1	90.6	89.1	91.9				80.6	78.0	
94.9		90.6 88.1	89.1 89.8	91.9 87.9	86.0	82.6	82.4	00.0	/0.0	
94.9 97.1	85.1					82.6 79.4	82.4 83.6	67.6	70.7	
94.9 97.1 94.3	85.1 92.3	88.1	89.8	87.9	86.0					
94.9 97.1 94.3 99.2	85.1 92.3 79.6	88.1 92.4	89.8 88.6	87.9 94.9	86.0 78.0	79.4	83.6	67.6	70.7	
94.9 97.1 94.3 99.2 97.5	85.1 92.3 79.6 85.3	88.1 92.4 91.1	89.8 88.6 89.8	87.9 94.9 93.1	86.0 78.0 82.9	79.4 81.5	83.6 83.8	67.6 74.0	70.7 74.1	
94.9 97.1 94.3 99.2 97.5 94.4	85.1 92.3 79.6 85.3 92.6	88.1 92.4 91.1 88.9	89.8 88.6 89.8 91.2	87.9 94.9 93.1 89.2	86.0 78.0 82.9 87.2	79.4 81.5 84.0	83.6 83.8 83.5	67.6 74.0 81.6	70.7 74.1 80.1	
94.9 97.1 94.3 99.2 97.5 94.4	85.1 92.3 79.6 85.3 92.6 79.2	88.1 92.4 91.1 88.9 92.8	89.8 88.6 89.8 91.2 88.7	87.9 94.9 93.1 89.2 96.3	86.0 78.0 82.9 87.2 79.4	79.4 81.5 84.0 79.4	83.6 83.8 83.5 84.0	67.6 74.0 81.6 67.7	70.7 74.1 80.1	  

### Table 1.4: Detailed classification of material inputs<sup>\*</sup>

mn tonnes

No.	Specification	1994	1995	2000	2005	2006	2007
1	Domestic extraction (used) 1	1,334.5	1,283.1	1,218.5	1,082.0	1,102.2	1,109.4
2	Abiotic raw material (used)	1,122.5	1,061.9	972.3	834.3	867.9	847.1
3	Energy sources	278.0	265.5	220.7	220.9	215.7	219.0
4	Hard coal		53.6	33.6	24.9	20.9	21.5
5	Brown coal (lignite)		192.8	167.7	177.9	176.3	180.4
6 7	Crude (mineral) oil		3.0	3.1	3.6	3.5	3.4
8	Natural gas, pit gas and petroleum gas Other energy sources 2		15.7 0.5	15.7 0.5	14.2 0.3	14.6 0.3	13.4 0.3
° 9	Minerals		796.4	751.7	613.4	652.2	628.0
10	Ores		0.1	0.5	0.4	0.4	0.4
11	Industrial and construction minerals		796.3	751.2	613.0	651.8	627.6
12	Construction minerals		737.9	691.9	550.4	587.6	565.5
13	Sand and gravel	322.5	200.7	170.7	132.6	139.4	132.9
14	Raw and unbroken natural stones, crude earth 3	374.4	451.3	429.2	343.0	368.9	351.2
15	Other construction minerals 4	83.6	85.9	92.0	74.9	79.3	81.4
16	Industrial minerals	63.9	58.5	59.3	62.6	64.2	62.1
17	Special sand and clays	16.8	18.0	15.4	13.4	13.8	14.2
18	Minerals for chemestry and fertilization		8.4	8.2	8.9	9.1	9.3
19	Salts		13.0	14.6	19.0	19.5	15.7
20	Other industrial minerals 5		19.2	21.1	21.3	21.8	22.9
21	Biomass (used)		221.2	246.2	247.7	234.4	262.3
22	Biomass from agriculture (harvest)		204.1	221.5	220.8	204.3	226.2
23 24	Cereals and pulses Roots and tubers		40.2 38.4	45.7 42.2	46.4 37.5	43.8 31.3	40.9 37.4
24	Oil crops, hops and tobacco		3.3	42.2	5.2	5.5	5.5
26	Vegetables and fruits		6.2	9.0	7.6	8.0	8.7
27	Straw		18.7	20.4	20.5	19.8	18.1
28	Intercrops and turnip leavers		9.9	8.8	6.4	5.9	6.8
29	Fodder plants and grazing on permanent pastures		86.8	90.9	96.6	89.4	108.2
30	Other crops		0.6	0.5	0.6	0.6	0.6
31	Biomass from forestry (coniferous and non-coniferous wood) 6	16.8	16.9	24.5	26.6	29.8	35.8
32	Biomass from animals	0.2	0.2	0.2	0.3	0.3	0.3
33	Biomass from fishing 7	0.2	0.2	0.2	0.3	0.3	0.3
34	Biomass from hunting	0.0	0.0	0.0	0.1	0.0	0.1
35	Memorandum items for balancing	1,157.0	1,171.1	1,150.3	1,144.5	1,159.0	1,134.2
36	Oxygen for combustion 3		1,084.6	1,066.7	1,064.9	1,080.5	1,055.6
37	Oxygen for respiration 8		85.3	82.5	78.8	77.6	77.9
38	Nitrogen for emissions from combustion		1.2	1.0	0.8	0.8	0.8
39 40	Air for other industrial processes		-	-	- 563.5	600.9	607.5
40	Imports Raw materials		463.6 275.0	521.2 305.5	326.4	337.1	336.1
41	Energy sources		169.6	194.5	227.7	232.6	224.6
43	Minerals		82.7	86.0	72.5	76.2	80.0
44	Ores		47.3	51.9	47.0	49.6	52.3
45	Other minerals		35.5	34.1	25.5	26.6	27.8
46	Biomass		22.7	25.0	26.2	28.3	31.5
47	Semi-manufactured products	105.6	105.6	112.2	113.7	122.0	119.4
48	from energy sources	48.5	48.4	53.5	52.3	54.7	48.1
49	from minerals	37.5	38.0	36.0	34.1	36.9	38.6
50	from ores	9.6	9.7	13.0	17.2	19.4	21.1
51	from other minerals		28.3	23.0	16.8	17.5	17.5
52	from biomass		19.2	22.7	27.3	30.3	32.7
53	Finished products		83.0	103.2	121.7	140.4	150.0
54	mostly out of energy sources		15.9	20.3	25.2	28.4	30.3
55	mostly out of minerals		38.7	49.7	57.1	68.7	74.8
56 57	mostly out of other minerals		33.5	42.1	48.4	59.1 9.7	64.4 10.4
57 58	mostly out of other minerals mostly out of biomass		5.2 28.4	7.5 33.3	8.7 39.4	9.7 43.3	10.4 44.8
59	Packaging materials imported with products				- 59.4	45.5	
60	Waste imported for final treatment and disposal		_	0.2	1.7	1.4	2.0
61	Unused domestic extraction		2,219.0	2,059.0	2,182.3	2,114.1	2,205.8
62	Unused extraction from mining and quarrying of fossil fuels		1,807.7	1,565.0	1,758.2	1,690.9	1,763.2
63	including: overburden from brown coal		1,754.9	1,531.4	1,727.1	1,663.5	1,736.4
64	Unused extraction from mining and quarrying of fossil fuels 3		132.9	131.4	116.0	119.5	117.3
04		1					
65	Unused extraction of biomass 9	198.6	179.8	201.2	201.3	193.3	212.6

\* Some preliminary results. - From 2001 onwards imports are collected according to SITC. A comparison of the figures with earlier results is hence only partially possible. 1 Totalling not including oxygen, nitrogen and air.

2 Energetic peat and other products of mineral oil and natural gas.

3 Partially revised in comparison to the previous editions of this publication.

4 These include unbroken natural stones, limestone and dolomit and crude earth. 5 These include other industrial minerals and peat for agricultural use.

6 Methodological differences compared to the results of forest accounting.

7 Catches from the high seas and from coastal fishing, including landings abroad. 8 Including respiration of humans and farm animals.

9 Up to 2005 the unused extraction of timber biomass in minor extent comprises other positions (e.g. woodchips).

10 Since 2002 including dangerous waste.

11 Since 2004 without reused materials from excavation, construction and recultivation activities.

2008	2009	2010	2011	2012	2013	2014	2015
1,091.0	1,047.1	1,021.4	1,113.6	1,084.7	1,058.2	1,102.7	1,040.6
827.6	779.1	772.1	833.5	803.8	798.0	798.7	769.2
209.1	199.1	196.1	202.1	208.7	202.1	196.9	194.8
17.2	13.8	12.9	12.1	10.8	7.6	7.6	6.2
175.3	169.9	169.4	176.6	185.4	182.8	178.2	178.2
3.1	2.8	2.5	2.7	2.6	2.6	2.4	2.4
13.2	12.4	10.9	10.3	9.4	8.7	8.1	7.6
0.3	0.3	0.4	0.4	0.5	0.4	0.5	0.5
618.5	580.0	576.0	631.4	595.0	595.9	601.8	574.4
0.5	0.4	0.4	0.5	0.5	0.4	0.5	0.5
618.1	579.6	575.6	630.9	594.6	595.5	601.3	573.9
558.2	522.0	511.4	566.8	535.1	534.5	542.6	517.3
132.8	123.8	120.3	135.7	127.8	124.9	133.2	126.4
348.3	332.7	322.4	357.8	335.0	338.3	338.0	325.9
77.1	65.6	68.7	73.2	72.3	71.3	71.4	65.0
59.9	57.6	64.2	64.2	59.5	61.0	58.8	56.6
13.9	11.8	12.4	13.6	13.0	12.7	13.5	12.6
8.7	5.2	7.8	8.3	8.1	8.0	8.4	8.0
15.3	18.9	19.7	17.4	14.8	17.4	13.2	14.0
21.9	21.7	24.3	24.8	23.5	22.9	23.7	22.1
263.4	268.0	249.3	280.1	281.0	260.2	304.0	271.4
236.6	244.7	249.5	252.6	255.4	233.9	277.2	244.2
50.3	50.0	44.3	42.1	45.6	47.9	52.3	49.3
34.9	38.1	33.9	41.7	38.6	32.8	41.6	33.2
5.3	6.5	5.9	4.1	5.0	5.9	6.4	5.2
8.5	8.9	7.5	8.3	8.5	7.6	9.2	8.3
22.2	22.4	19.5	17.9	19.8	21.6	23.0	22.0
6.7	7.2	6.6	7.7	7.4	6.5	7.8	6.4
108.2	111.1	104.9	130.3	129.9	111.1	136.5	119.2
0.6		0.5		0.5	0.5		0.5
26.5	0.6 23.0	26.0	0.5	25.4	25.9	0.5	
	0.3	0.3	27.2	0.3	0.3	26.5	27.0
0.3 0.3	0.3	0.3	0.3 0.2	0.3	0.3	0.3	0.3
						0.2	0.3
0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1
1,149.5	1,072.2	1,127.4	1,091.2	1,094.7	1,119.0	1,048.8	1,052.8
1,070.4	993.2	1,049.4	1,013.5	1,016.5	1,040.3	969.7	974.4
78.3	78.3	77.3	77.0	77.6	78.0	78.4	77.8
0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6
-	-	-	-	-	-	-	-
606.9	539.2	592.5	615.9	587.6	607.3	624.1	645.2
337.5	304.1	322.8	334.2	319.0	332.6	340.2	354.8
228.1	213.2	214.1	222.3	214.0	224.6	227.4	244.1
78.0	57.3	73.4	76.1	68.8	68.5	72.2	69.5
51.2	33.6	47.8	47.1	44.4	45.2	48.4	47.4
26.9	23.8	25.6	29.0	24.4	23.3	23.8	22.1
31.4	33.5	35.3	35.9	36.2	39.5	40.6	41.2
122.1	111.2	127.1	131.1	123.6	129.3	132.3	134.7
52.8	51.2	57.2	56.8	52.1	58.1	57.5	59.9
37.4	29.8	36.6	39.3	36.5	35.3	37.8	36.6
20.2	13.3	18.0	20.2	18.1	18.3	18.8	17.6
17.2	16.5	18.7	19.2	18.4	17.1	19.0	19.0
31.9	30.2	33.2	35.0	35.0	35.9	37.0	38.1
144.9	121.4	140.0	147.7	142.2	142.3	148.2	152.1
29.1	25.6	29.3	30.5	29.8	31.0	32.5	33.6
73.0	55.4	68.1	73.8	69.5	69.0	71.9	73.7
62.2	45.9	57.2	62.5	59.0	58.2	60.5	62.1
10.9	9.5	10.9	11.3	10.6	10.8	11.4	11.6
42.7	40.4	42.6	43.4	42.8	42.3	43.8	44.8
-	-	-	-	-	-	-	-
2.5	2.6	2.7	2.9	2.8	3.1	3.5	3.6
2,228.5	2,089.6	2,115.0	2,104.4	2,006.1	2,042.1	2,023.7	2,007.1
1,812.2	1,697.0	1,723.3	1,703.2	1,597.2	1,639.8	1,593.6	1,605.0
1,791.0	1,680.3	1,706.8	1,690.5	1,586.2	1,630.4	1,584.9	1,598.4
114.8	96.2	106.7	114.4	110.9	111.0	114.4	108.4
190.3	188.5	176.6	174.4	185.4	175.7	194.6	172.7
111.2	107.9	108.4	112.4	112.6	115.5	121.1	121.0

Table 1.4: Detailed classification of material inputs<sup>\*</sup> mn tonnes

#### Table 1.5: Detailed classification of material outputs<sup>\*</sup>

#### mn tonnes

No.	Specification	1994	1995	2000	2005	2006
1	Domestic processed output	1,710.2	1,723.4	1,685.3	1,684.5	1,702.4
2	Air emissions	958.5	956.2	913.1	876.9	888.2
3	Greenhouse gases 1	943.8	942.6	903.0	868.8	880.1
4	Carbon dioxide (CO2) 2	939.2	938.2	899.3	865.9	877.4
5	Methane (CH4) 2	4.3	4.2	3.5	2.8	2.6
6	Nitrous oxide (N2O) 2	0.2	0.2	0.1	0.1	0.1
7	Hydrofluoracarbons (HFC)	0.0	0.0	0.0	0.0	0.0
8	Perfluorocarbons (PFC)	0.0	0.0	0.0	0.0	0.0
9	Sulphur hexaflouride (SF6)	0.0	0.0	0.0	0.0	0.0
10	Air pollutants	14.7	13.6	10.1	8.1	8.0
11	Carbon monoxide (CO)	6.7	6.4	4.8	3.7	3.6
12	Nitrogen oxide (NOx)	2.2	2.2	1.9	1.6	1.6
13	Sulphur dioxide (SO2)	2.4	1.7	0.6	0.5	0.5
14	Ammonia (NH3)	0.7	0.7	0.7	0.7	0.7
15	Volatile organic compounds, not including methane (NMVOC)	2.1	2.0	1.6	1.3	1.3
16	Particulate matter	0.6	0.5	0.5	0.4	0.4
17	Emissions to water 3	4.5	4.0	3.2	0.0	0.0
18	Dissipative use of products	33.7	35.3	35.1	35.1	34.0
10 19	Farmyard manure 4	26.5	27.2	27.2	25.5	24.0
	Mineral fertilisers					
20		4.7	4.7	4.9	4.4	4.5
21	Pesticides	0.0	0.0	0.0	0.0	0.0
22	Seeds	1.6	1.7	1.8	1.7	1.7
23	Thawing salt	0.9	1.6	1.1	3.4	3.1
24	Dissipative losses 5	0.1	0.1	0.1	0.1	0.1
25	Memorandum items of balancing	713.4	727.9	733.9	772.3	780.1
26	Water vapour from combustion 6	567.0	582.4	592.2	635.8	645.2
27	Respiration of humans and livestock (CO2) 7	118.3	117.3	113.4	108.3	106.8
28	Water vapour (H2O) 8	28.1	28.2	28.2	28.2	28.1
29	Exports	223.2	224.7	289.2	357.0	379.6
30	Raw materials	55.3	55.9	74.4	78.1	82.0
31	Energy sources	5.0	7.2	13.4	15.1	11.4
32	Minerals	34.9	32.2	38.1	41.5	48.0
33	Ores	0.2	0.2	0.2	0.1	0.2
34	Other minerals	34.7	32.1	37.9	41.3	47.9
35	Biomass	15.5	16.5	22.9	21.5	22.5
36	Semi-manufactured products	86.1	83.5	98.6	130.1	134.7
37	from energy sources	23.8	21.5	26.9	37.6	39.9
38	from minerals	43.6	41.8	46.1	61.8	61.9
39	from ores	15.0	13.8	14.7	15.2	16.7
40	from other minerals	28.6	28.1	31.4	46.6	45.2
41	from biomass	18.7	20.2	25.6	30.7	32.8
42	Finished products	81.8	85.2	116.2	148.8	163.0
43	mostly out of energy sources	20.6	20.9	26.8	34.7	37.0
44	mostly out of minerals	42.3	44.6	61.7	75.8	85.7
45	mostly out of ores	36.8	38.9	52.5	64.1	72.7
46	mostly out of other minerals	5.5	5.7	9.2	11.7	13.0
46 47		18.9	19.7	27.7	38.3	40.3
	mostly out of biomass	10.9	19.7	27.7	50.5	40.5
48	Packaging materials exported with products	-	-	2 050 0	-	-
49	Disposal of unused domestic extraction 9	2,364.5	2,219.0	2,059.0	2,182.3	2,114.1
50	Indirect flows associated to exports	-	-	-	_	-
51	Balance input/output 10	1,021.3	969.7	915.4	748.6	780.1
52	including: landfilled waste	111.0	94.8	67.1	45.7	38.7
	Memorandum item:					
53	Water withdrawal from nature 11	49,199.9	48,830.9	44,929.3	-	-
54	Water discharged to nature 12	49,007.6	48,642.5	44,765.8	-	-
55	Balance export and import of water	-8.0	-7.8	-7.2	-	-
56	Balance water	184.4	180.6	156.3	_	-

\* Some preliminary results. - From 2001 onwards imports are collected according to SITC. A comparison of the figures with earlier results is hence only partially possible.

1 Not including CFCs and halons.

2 Source: www.unfccc.int

3 Emissions of nitrogen, phosphor and other substances and (organic) material behind sewage plant. Up to 2001 estimation.

4 Slurry, manure, etc. (industrial fertilisers) in dry substances.

5 Including only brake and tyre losses.

6 Partially revised in comparison to the previous editions of this publication. 7 Including respiration emissions (CO<sub>2</sub>) of humans and farm animals.

8 Including only water evaporation by humans by respiration and persipiration via the skin.

9 Value corresponds to unused domestic extraction.

10 As of 2002 emissions to water are not included.

11 Including infiltration and rain water.

12 Including infiltration and rain water, loss occuring with water distribution and evaporation.

2007	2008	2009	2010	2011	2012	2013	2014	2015
1,675.4	1,689.3	1,589.2	1,668.4	1,624.8	1,630.6	1,665.6	1,576.4	1,579.0
861.2	863.8	797.9	842.3	822.2	826.3	844.6	803.7	800.8
853.4	856.2	791.1	834.9	815.0	819.6	837.9	797.2	794.5
850.7	853.6	788.5	832.4	812.6	817.1	835.5	794.8	792.1
2.5	2.5	2.4	2.4	2.3	2.3	2.3	2.3	2.3
0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.8	7.5	6.8	7.3	7.2	6.7	6.7	6.4	6.4
3.5	3.4	3.0	3.3	3.2	2.9	2.8	2.7	2.7
1.5	1.4	1.3	1.3	1.3	1.3	1.3	1.2	1.2
0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4
0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8
1.3	1.2	1.1	1.2	1.1	1.1	1.1	1.0	1.0
0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.4
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32.5	32.9	34.2	36.2	34.0	33.2	35.0	36.6	34.8
25.0	25.3	25.1	24.5	24.4	24.5	24.5	25.0	24.6
4.8	4.1	4.2	4.8	4.7	4.9	5.3	5.3	4.8
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.6	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6
1.0	1.7	3.1	5.3	3.2	2.2	3.6	4.7	3.7
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
781.6	792.5	757.1	789.9	768.5	771.0	786.0	736.1	743.3
646.5	656.8	621.5	655.7	634.8	636.5	650.8	600.2	607.9
107.1	107.7	107.7	106.3	105.9	106.7	107.3	107.8	107.0
28.1	28.0	27.9	27.8	27.8	27.9	28.0	28.1	28.3
								398.1
396.2	388.0	338.5	365.3	378.4	367.8	370.1	380.7	
83.6	85.4	78.1	80.5	86.8	75.3	75.8	78.5	90.1
11.1	11.5	9.9	15.0	21.7	16.4	16.5	18.1	29.6
51.0	53.1	46.6	44.5	46.3	40.1	37.4	38.5	36.7
0.2	0.2	0.1	0.2	0.3	0.3	0.3	0.4	0.3
50.8	53.0	46.4	44.3	46.1	39.8	37.1	38.2	36.4
21.5	20.8	21.6	21.0	18.8	18.8	21.9	21.9	23.8
141.7	131.7	116.7	120.4	121.8	123.4	125.3	129.5	130.9
41.5	38.6	31.8	27.7	27.7	33.5	35.5	38.6	40.6
65.8	57.4	49.7	55.8	56.4	53.1	53.3	53.2	52.0
18.1	17.8	15.0	18.9	20.0	18.8	18.1	19.1	17.6
47.7	39.6	34.7	36.8	36.4	34.3	35.1	34.1	34.4
34.4	35.7	35.2	36.9	37.6	36.8	36.5	37.7	38.3
170.9	170.9	143.8	164.4	169.8	169.1	169.0	172.7	177.1
38.8	33.6	34.7	38.0	38.0	38.2	38.5	39.8	40.7
90.1	92.6	68.9	82.5	89.2	87.7	87.2	89.2	90.8
76.4	79.0	57.4	68.6	75.0	74.2	72.9	74.6	76.3
13.6	13.5	11.5	13.9	14.3	13.5	14.3	14.6	14.5
42.0	44.7	40.2	44.0	42.7	43.2	43.4	43.8	45.6
42.0	-	- 40.2	-	42.7	49.2	-	-	45.0
2,205.8	2,228.5	2,089.6	2,115.0	2,104.4	2,006.1	2,042.1	2,023.7	2,007.1
-	-	-	-	-	-	-	-	-
779.6	770.0	730.7	707.6	817.4	768.7	748.7	818.4	761.5
43.2	41.6	35.4	34.0	36.9	37.0	42.1	45.0	44.4
37,747.2	_	-	38,103.8	_	_	29,685.8	-	-
37,625.6	_	-	37,984.0	-	-	29,581.6	_	-
-1.0	_	_	-1.0	_	_	-2.7	_	-

Table 1.5: Detailed classification of material outputs<sup>\*</sup> mn tonnes

# Table 1.6: Environmental and economic indicators of the German Sustainable Development Strategy

No.	No. <sup>1</sup>	Indicator	Unit	2000	2001	2002	2003
1	2.1.a	Nitrogen surplus 3	kg/ha	112	112	109	106
2	2.1.b	Organic farming - Share of total utilised agricultural land	%	-	3.6	-	4.3
3	3.2.a	Emissions of air pollutants 4	. 2005 = 100				
4	3.2.b	Population with excessive exposure to particulate matter in Germany 5	in million				
5	6.1.a	Phosphorous in flowing waters 6	%	28.5	29.2	26.8	31.1
6	6.1.b	Nitrate in groundwater 7	%				
7	7.1.a	Final energy productivity 8	2008 = 100	•			
8	7.1.b	Primary energy consumption 8	. 2008 = 100				
9	7.2.a	Share of renewable energies in gross final energy consumption 9	%	3.7	4.0	4.4	5.8
10	7.2.b	Share of renewable energy sources in electricity consumption 9	%	6.2	6.6	7.7	7.6
11	8.1	Raw material input productivity 10	. 2000 = 100	100			
12	8.2.a	Funding balance	%	1.5	- 3.1	- 3.9	- 4.2
13	8.2.b	Structural funding balance 11	. %	-	-	-	-
14	8.2.c	Government debt 12	%	58.9	57.7	59.4	63.1
15	8.3	Gross fixed capital formation in relation to GDP	. %	23.0	21.7	20.0	19.5
16	8.4	Gross domestic product per capita (price-adjusted)	. Euro 1,000	29.0	29.4	29.4	29.2
17	11.1.a	Built-up area and transport infrastructure expansion 13	. ha/day	129.1	128.3	123.1	115.1
18	11.1.b	Change in open space per capita 14	m²/year				
19	11.1.c	Settlement density (inhabitants per km2 of settlement and transport land) 15	2000 = 100	100	99.1	98.3	97.4
20	11.2.a	Final energy consumption in freight transport 16	. 2005 = 100				
21	11.2.b	Final energy consumption in passenger transport 16	. 2005 = 100				
22	12.1.a	Market share of goods certified by independently verified sustainability					
		labelling schemes 17	%				
23	12.1.b	Energy consumption by private households	. 2005 = 100	•			
24	12.1.b	CO2 emissions by private households	2005 = 100	•			
25	12.2	EMAS eco-management 18	.ganisational locatio				
26	13.1.a	Greenhouse gas emissions 19	1990 = 100	83.4	84.6	82.9	82.7
27	13.1.b	German funding for climate protection 20	. Euro mn				
	14.1.a	Total nitrogen input via selected German inflows 21					
29		Baltic Sea	mg N/l	4.3	4.4	4.8	4.5
30		North Sea	mg N/l	5.2	5.1	4.8	4.7
31	14.1.b	Share of sustainably fished fish stocks in the North and Baltic Sea 22	%				28.6
32	15.1	Species diversity and landscape quality 23	2030 = 100	71.9	71.1	69.7	69.8
33	15.2	Eutrophication of ecosystems 24	Share of land in %	66.0			
34	15.3	Payments to developing countries for the verified preservation of forests 25	Euro mn				

1 Numbers in brackets according to the numbers in the German Strategy for Sustainable Development.

2 Preliminary results (some values estimated).

3 Moving five-year average, referring to the middle year.

Source: Institute for Crop and Soil Science, Julius Kühn Institute and Institute of Landscape Ecology and Ressource Management, University of Giessen

4 Average index of measurement data for SO 2, NOx, NH3, NMVOC und PM2.5. - Source: German Environment Agency

5 Source: German Environment Agency, World Health Organization

6 The share of monitoring points at which the benchmark value for a good ecological status for total phosphorous in flowing waters is observed. - Source: German Environment Agency according to information from the German Working Group on water issues of the Länder and the Federal Government represented by the Federal Environment Ministry

7Proportion of monitoring points at which the threshold 50 milligrams of nitrate per litre per year is met on average. - Source: German Environment Agency and Länder Initiative for a Set of Core Indicators (LIKI) based on data from the German Working Group on water issues of the Länder and the Federal Government represented by the Federal Environment Ministry 8 Source: Federal Statistical Office, Energy Balance Association in Berlin (AGEB)

9 Source: Working Group on Renewable Energies Statistics, Federal Ministry for Economic Affairs and Energy

10 Value of final use (price-adjusted) relative to raw material extraction and imports in raw material equivalents.

11 Source: Federal Ministry of Finance

12 Source: Federal Statistical Office, German Bundesbank

13 Moving four-year average, reference to the relevant year and the preceding three years.

14 Moving four-year average. - Source: Federal Statistical Office, Federal Institute for Research on Building, Urban Affairs and Spatial Development

15 Source: Federal Statistical Office, Federal Institute for Research on Building, Urban Affairs and Spatial Development

16 Source: Federal Ministry of Transport and Digital Infrastructure, Institute for Energy and Environmental Research

17 Source: Gesellschaft für Konsumforschung, the Federal Motor Transport Authority, Agrarmarkt Informations-Gesellschaft mbH, the Organic Food Production Alliance, the Association for Sustainable Mobility. the German Environment Agency

18 EMAS = Eco-Management and Audit Scheme. - Source: Deutscher Industrie und Handelskammertag e.V., the German EMAS Advisory Board,

the German Environment Agency

19 Greenhouse gases = CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, SF<sub>6</sub>, NF<sub>3</sub>, H-FKW/HFC and FKW/PFC. – Source: German Environment Agency

20 German funding primarily to developing and emerging countries for the reduction of greenhouse gases and for the adaption to climate change.

Source: Federal Ministry for Economic Cooperation and Development

21 Nitrogen input via the rivers Peene, Trave and Warnow into the Baltic Sea as well as Eider, Elbe, Ems and Weser into the North Sea.

Source: Federal Statistical Office, German Environment Agency using information from the Länder and river basin communitie

22 Source: International Council for the Exploration of the Sea

23 Source: Federal Agency for Nature Conservation

24 Ecosystems in which critical loads for eutrophication due to nitrogen input are exceeded. Share of assessed land containing sensitive ecosystems. Source: European Environment Agency

25 Source: Federal Ministry for Economic Cooperation and Development

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013 <sup>2</sup>	2014 <sup>2</sup>	2015 <sup>2</sup>	2016 <sup>2</sup>	Ν
106	105	103	100	98	98	97	95	95	97				
-	4.6	-	5.1	-	-	5.6	-	5.8	6.0	6.2	6.3	6.8	
	100	99.4	96.0	93.3	87.9	90.7	89.2	86.0	86.2	83.0	83.0		
			50.1	25.1	28.5	28.9	36.6	12.2	14.3	12.4	4.3		
32.0	30.5	34.0	31.2	32.9	33.3	31.9	37.9	35.4	35.9	35.1	30.2		
		•		81.8	82.5	81.7	82.0	81.0	81.4	81.8			
				100	99.8	96.6	105.0	105.1	102.6	110.4	109.8	108.8	
		•		100	94.1	98.9	94.6	93.5	96.1	91.7	92.2	93.5	
6.4	7.2	8.1	9.7	9.1	10.1	11.1	12.2	13.1	13.2	13.8	14.7	14.6	
9.3	10.2	11.6	14.2	15.1	16.3	17.0	20.3	23.5	25.1	27.3	31.5	31.7	
				115.4	122.1	116.8	119.6						
- 3.7	- 3.4	- 1.7	0.2	- 0.2	- 3.2	- 4.2	- 1.0	0.0	- 0.1	0.3	0.6	0.8	
-	- 2.0	- 1.4	- 0.6	- 0.6	- 0.7	- 2.0	- 1.2	0.2	0.5	0.8	0.7	0.8	
64.8	67.0	66.5	63.7	65.1	72.6	80.9	78.6	79.8	77.4	74.6	70.9	68.1	
19.2	19.1	19.8	20.1	20.3	19.2	19.4	20.3	20.1	19.7	20.0	19.9	20.0	
29.6	29.8	31.0	32.1	32.5	30.8	32.1	33.3	33.4	33.5	34.0	34.3	34.6	
115.1	114.3	113.3	112.8	103.8	93.9	86.6	80.9	74.4	72.6	69.2	66.1		
- 5.1	- 5.0	- 4.8	- 4.7	- 4.6	- 4.3	- 4.0	- 4.2	- 3.8	- 3.6	- 3.5	- 2.9		
96.6	95.7	94.8	93.8	92.9	92.1	91.5	89.1	88.9	88.8	88.7	89.5		
	100	105.0	108.2	106.9	97.8	103.3	106.2	103.5	104.4	107.1	108.9		
·	100	98.6	97.9	96.6	97.5	97.4	98.0	97.2	96.9	97.6	98.0		
								3.6	4.4	5.9	7.6		
	100	98.0	<i>93.3</i>	96.1	97.1	101.9	97.8	96.6	98.3	93.8			
•	100	98.5	96.2	99.1	100.0	104.9	102.7	102.1	103.1	99.2			
	1 958	1 985	1 956	1 917	1 906	1 913	1 903	1 834	1 877	1 936	2 031	2 111	
81.3	79.3	79.9	77.7	77.9	72.5	75.3	73.7	74.1	75.6	72.3	72.1	72.4	
•							1.6	1.7	2.0	2.3	2.7		
4.3	4.4	4.4	4.4	4.7	4.5	4.5	4.5	4.2	4.0	3.9			
4.5	4.5	4.3	4.3	4.2	4.0	3.9	4.0	3.8	3.8	3.8			
28.6	21.4	17.9	25.0	25.0	39.3	35.7	48.3	34.5	55.2	44.8	53.6		
72.4	71.1	70.2	70.2	70.4	67.4	68.0	66.6	70.8	68.0	67.2			
	57.0					54.0							
					3.0	20.0	12.0	24.9	36.3	31.0	15.7		

Table 1.6: Environmental and economic indicators of the German Sustainable Development Strategy

# Table 2.1: Gross value added $^{\star}$ 2000 to 2014 (at current prices) EUR mn

No.	CPA <sup>1</sup>	Homogeneous branches	2000	2001	2002	2003	2004	2005
1	А	Products of agriculture, forestry and fishing	20,109	22,690	18,911	17,446	20,683	15,818
2	В	Mining and quarrying	5,370	5,233	5,551	4,711	4,883	4,893
3	С	Manufactured products	383,846	388,090	382,142	385,649	400,044	404,575
4	D (35)	Electricity, gas, steam and air conditioning	21,887	21,945	23,949	23,331	28,335	29,093
5	Е	Water supply; sewerage, waste management and remediation services	19,325	19,163	19,514	20,425	21,472	22,360
6	F	Constructions and construction works	101,578	96,393	92,928	88,940	86,401	84,414
7	G	Wholesale and retail trade services; repair services of motor vehicles	213,549	228,024	231,465	234,947	236,050	240,653
8	Н	Transportation and storage services	79,451	83,511	85,813	86,995	88,619	92,691
9	1	Accommodation and food services	31,549	32,446	31,784	31,337	31,485	31,946
10	J	Information and communication services	88,415	97,556	100,923	92,257	98,623	98,229
11	К	Financial and insurance services	81,854	85,121	92,126	96,262	108,296	106,227
12	L	Real estate services	221,789	231,807	239,346	239,328	241,764	247,732
13	М	Professional, scientific and technical services	151,113	157,646	157,960	159,391	155,930	158,915
14	Ν	Administrative and support services	80,191	82,043	83,725	86,038	88,987	93,856
15	0	Public administration and defence services	124,277	126,180	128,708	129,938	129,917	130,278
16	Р	Education services	81,378	83,498	86,326	86,597	88,484	89,425
17	Q	Human health and social work services	118,023	121,559	129,328	131,728	134,906	137,076
18	R-T	Other services	82,548	83,982	84,831	86,709	89,704	90,842
19		All homogeneous branches	1,906,252	1,966,887	1,995,330	2,002,029	2,054,583	2,079,023

\* Source: Results 2000 -2013: Input-Output Accounts; 2014: Estimation EEA.

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

2006	2007	2008	2009	2010	2011	2012	2013	2014	No.
16,879	18,622	20,563	16,279	16,705	19,001	18,570	23,386	19,885	1
6,055	6,305	7,484	6,989	7,846	8,267	8,206	7,427	7,168	2
435,277	462,959	449,062	371,955	446,690	475,429	481,939	484,830	510,800	3
31,651	34,307	41,419	43,386	43,833	35,990	43,654	38,501	36,166	4
22,666	23,543	24,833	23,709	25,034	26,658	27,312	27,636	29,471	5
86,974	92,012	96,213	96,771	105,833	112,884	116,928	118,513	123,692	6
247,883	255,593	264,982	261,454	251,374	273,656	264,704	266,089	286,575	7
98,338	103,550	106,223	102,806	106,124	106,947	113,417	120,539	118,446	8
32,190	34,219	33,908	32,519	34,311	36,749	38,439	37,790	40,400	9
104,265	110,900	112,265	107,777	107,282	117,351	121,490	125,560	130,415	10
105,790	99,916	91,246	100,612	102,507	95,511	99,445	104,327	105,049	11
257,754	274,488	286,270	282,293	283,744	299,420	295,114	305,238	304,268	12
165,964	175,056	180,628	164,069	170,141	176,181	187,182	192,660	196,410	13
96,752	106,420	109,130	101,668	108,201	113,952	118,838	131,637	143,217	14
131,623	133,275	137,671	142,953	146,337	148,661	152,416	156,632	160,646	15
89,000	91,061	93,391	96,785	100,598	104,893	107,947	111,687	115,798	16
139,689	141,177	147,247	154,993	162,587	168,790	177,653	185,212	194,509	17
93,146	94,790	98,404	96,571	98,181	100,985	101,866	104,964	107,783	18
2,161,896	2,258,193	2,300,939	2,203,589	2,317,328	2,421,325	2,475,120	2,542,628	2,630,697	19

Table 2.1: Gross value added  $^{\star}$  2000 to 2014 (at current prices) EUR mn

# Table 2.2: Gross value added 2000 to 2014 (at current prices) in percent

No.	CPA 1)	Homogeneous branches	2000	2001	2002	2003	2004
1	А	Products of agriculture, forestry and fishing	1.1	1.2	0.9	0.9	1.0
2	В	Mining and quarrying	0.3	0.3	0.3	0.2	0.2
3	С	Manufactured products	20.1	19.7	19.2	19.3	19.5
4	D (35)	Electricity, gas, steam and air conditioning	1.1	1.1	1.2	1.2	1.4
5	E	Water supply; sewerage, waste management and remediation services	1.0	1.0	1.0	1.0	1.0
6	F	Constructions and construction works	5.3	4.9	4.7	4.4	4.2
7	G	Wholesale and retail trade services; repair services of motor vehicles	11.2	11.6	11.6	11.7	11.5
8	н	Transportation and storage services	4.2	4.2	4.3	4.3	4.3
9	I	Accommodation and food services	1.7	1.6	1.6	1.6	1.5
10	J	Information and communication services	4.6	5.0	5.1	4.6	4.8
11	К	Financial and insurance services	4.3	4.3	4.6	4.8	5.3
12	L	Real estate services	11.6	11.8	12.0	12.0	11.8
13	м	Professional, scientific and technical services	7.9	8.0	7.9	8.0	7.6
14	Ν	Administrative and support services	4.2	4.2	4.2	4.3	4.3
15	0	Public administration and defence services	6.5	6.4	6.5	6.5	6.3
16	Р	Education services	4.3	4.2	4.3	4.3	4.3
17	Q	Human health and social work services	6.2	6.2	6.5	6.6	6.6
18	R-T	Other services	4.3	4.3	4.3	4.3	4.4
19		All homogeneous branches	100	100	100	100	100

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

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	No
0.8	0.8	0.8	0.9	0.7	0.7	0.8	0.8	0.9	0.8	1
0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	2
19.5	20.1	20.5	19.5	16.9	19.3	19.6	19.5	19.1	19.4	3
1.4	1.5	1.5	1.8	2.0	1.9	1.5	1.8	1.5	1.4	4
1.1	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1
4.1	4.0	4.1	4.2	4.4	4.6	4.7	4.7	4.7	4.7	(
11.6	11.5	11.3	11.5	11.9	10.8	11.3	10.7	10.5	10.9	
4.5	4.5	4.6	4.6	4.7	4.6	4.4	4.6	4.7	4.5	;
1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.5	1.5	
4.7	4.8	4.9	4.9	4.9	4.6	4.8	4.9	4.9	5.0	1
5.1	4.9	4.4	4.0	4.6	4.4	3.9	4.0	4.1	4.0	1
11.9	11.9	12.2	12.4	12.8	12.2	12.4	11.9	12.0	11.6	1
7.6	7.7	7.8	7.9	7.4	7.3	7.3	7.6	7.6	7.5	1
4.5	4.5	4.7	4.7	4.6	4.7	4.7	4.8	5.2	5.4	1
6.3	6.1	5.9	6.0	6.5	6.3	6.1	6.2	6.2	6.1	1
4.3	4.1	4.0	4.1	4.4	4.3	4.3	4.4	4.4	4.4	1
6.6	6.5	6.3	6.4	7.0	7.0	7.0	7.2	7.3	7.4	1
4.4	4.3	4.2	4.3	4.4	4.2	4.2	4.1	4.1	4.1	1
100	100	100	100	100	100	100	100	100	100	1

Table 2.2: Gross value added 2000 to 2014 (at current prices) in percent

# Table 2.3: Gross value added 2000 to 2012 (price-adjusted)\*

2005=100

No.	CPA <sup>1)</sup>	Homogeneous branches	2000	2001	2002	2003	2004	2005
1	А	Products of agriculture, forestry and fishing	133.3	148.8	122.6	112.0	131.4	100
2	В	Mining and quarrying	115.1	110.9	116.3	97.7	100.3	100
3	C	Manufactured products	-	96.5	94.4	95.2	98.7	100
4	D (35)	Electricity, gas, steam and air conditioning		78.2	84.4	81.4	97.9	100
5	E (55)	Water supply; sewerage, waste management and remediation services		88.9	89.5	92.7	96.5	100
6	F	Constructions and construction works	126.2	118.4	112.9	107.0	102.9	100
7	•			98.3	98.6	99.1	98.6	100
8	G	Wholesale and retail trade services; repair services of motor vehicles		93.4	98.0 94.9	95.3	96.1	100
-	H	Transportation and storage services						
9	I	Accommodation and food services	103.6	105.3	102.0	99.6	99.1	100
10	J	Information and communication services	94.4	103.0	105.3	95.3	100.9	100
11	К	Financial and insurance services	80.8	83.1	88.9	92.0	102.5	100
12	L	Real estate services	93.9	97.0	99.0	98.1	98.1	100
13	м	Professional, scientific and technical services	99.7	102.9	101.9	101.8	98.6	100
14	Ν	Administrative and support services	89.6	90.7	91.4	93.1	95.3	100
15	0	Public administration and defence services	100.0	100.4	101.3	101.2	100.2	100
16	Р	Education services	95.4	96.8	99.0	98.3	99.5	100
17	0	Human health and social work services	90.3	92.0	96.7	97.6	98.9	100
18	R-T	Other services	95.3	95.9	95.7	96.9	99.3	100
19		All homogeneous branches		97.5	97.9	97.5	99.2	100

\* Source: Estimation EEA

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

2006	2007	2008	2009	2010	2011	2012	2013	2014	No
1015			22.2	101.0		100 (	125.2		
106.5	116.8	128.0	99.3	101.0	113.8	109.6	135.2	112.8	1
123.5	127.8	150.7	137.9	153.4	160.1	156.6	138.8	131.4	2
109.2	114.6	112.5	89.8	108.9	117.1	115.1	114.4	120.5	3
108.5	117.0	140.2	144.0	144.2	117.2	140.1	121.0	111.5	4
101.1	104.5	109.4	102.4	107.1	113.0	114.0	113.0	118.2	5
102.8	108.1	112.3	110.7	120.0	126.7	129.3	128.4	131.5	6
102.8	105.4	108.5	104.9	99.9	107.7	102.7	101.1	106.8	7
105.9	110.8	112.9	107.1	109.5	109.3	114.2	118.9	114.6	8
100.5	106.3	104.5	<i>98.3</i>	102.8	109.0	112.3	108.2	113.5	9
105.9	112.0	112.6	105.9	104.5	113.2	115.5	116.9	119.1	10
99.4	93.3	84.6	91.4	92.3	85.2	87.4	89.8	88.7	1
103.8	109.9	113.8	110.0	109.6	114.5	111.2	112.7	110.2	1
104.2	109.3	112.0	99.7	102.4	105.0	110.0	110.9	110.9	1
102.9	112.5	114.5	104.6	110.3	115.0	118.2	128.3	136.9	1
100.8	101.5	104.1	105.9	107.5	108.1	109.2	110.0	110.6	1
99.3	101.0	102.9	104.5	107.6	111.1	112.7	114.2	116.2	1
101.7	102.2	105.8	109.2	113.5	116.7	121.0	123.6	127.3	1
102.3	103.5	106.7	102.6	103.4	105.3	104.7	105.7	106.4	1
104.1	107.9	109.6	102.6	107.3	111.4	111.9	112.8	114.9	1

Table 2.3: Gross value added 2000 to 2012 (price-adjusted) \* 2005=100