



2021

# Environmental Data – Environmental indicators for Baden-Württemberg



Baden-Württemberg

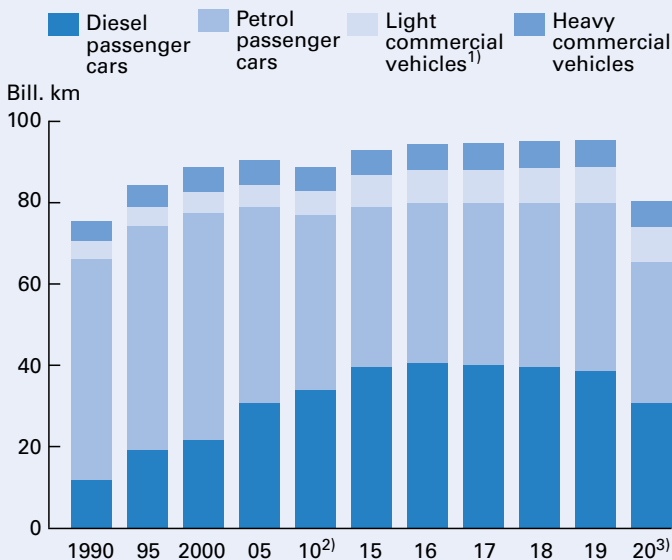
STATISTISCHES LANDESAMT

## General data, traffic

		1991	2020
	<b>Unit</b>		
<b>Population, economy</b>			
Annual average population <sup>1)</sup>	Mill.	9,9	11,1 <sup>2)</sup>
Gross domestic product at current prices <sup>1)</sup>	Mill. EUR	242 884	500 790
Employed persons in Germany <sup>1)</sup>	Mill.	5,2	6,3
<b>Stock of motor vehicles</b>			
		<b>1991</b>	<b>2020<sup>3)</sup></b>
Stock of passenger cars	1 000	5 035	6 803 <sup>4)</sup>
Petrol-engined passenger cars <sup>5)</sup>	1 000	4 308	4 487 <sup>4)</sup>
Diesel-engined passenger cars	1 000	727	2 155 <sup>4)</sup>
New car registrations	1 000	526	426
Hybrid, gas, electric and other forms of propulsion	1 000	–	118
<b>Total annual mileage</b>			
	Mill. km	76 692	80 263
Passenger traffic	Mill. km	69 401	66 820
Passenger cars	Mill. km	67 145	65 200
Freight traffic	Mill. km	7 291	13 443
Heavy commercial vehicles	Mill. km	5 083	6 232
Light commercial vehicles	Mill. km	2 209	7 211
		<b>2004</b>	<b>2019</b>
<b>Local passenger transport services<sup>6)</sup></b>	Pkm/Inh.	1 089	1 224

1) www.vgrdl.de; calculation status August 2020/February 2021, population base census 2011. – 2) Population as of June 30 – 3) Excluding temporarily decommissioned vehicles. – 4) Value for 2021. – 5) Including gas and other forms of propulsion. – 6) 2004: Calculation based on 1987 census, 2019: Calculation based on 2011 census.

## Annual mileage of road traffic



1) Incl. Motorcycles and buses. – 2) Revised values. – 3) Corona-related decrease of the annual mileage.

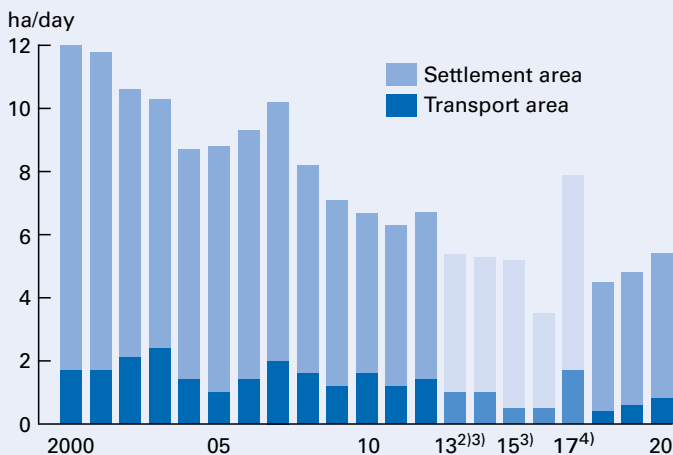
Data sources: Traffic census results of the Landesstelle für Straßentechnik Baden-Württemberg (State Office for Road Technology Baden-Württemberg) and own model calculations.

## Land use, nature and landscape

		1996	2020
	<b>Unit</b>		
<b>Total area (TA)<sup>1)</sup></b>	1 000 ha	3 575	3 575
<b>Settlement and Traffic Area (SaT)<sup>1)2)</sup></b>	% of TA	12,7	14,7
Traffic	% of SaT	41,2	37,9
Residential area	% of SaT	25,8	29,9
Industrial and Commercial space	% of SaT	11,5	14,1
Sports, Leisure and Relaxing area, other	% of SaT	21,5	18,1
Increase in settlement and traffic area	ha/day	10,3	5,4
<b>Forest<sup>1)</sup></b>	1 000 ha	1 341	1 353
Forest condition: Percentage of noticeably damaged trees	%	35	46
<b>Agriculture<sup>1)</sup></b>	1 000 ha	1 696	1 609
Utilised agricultural area (UAA)	1 000 ha	1 475	1 408
Areas under organic farming <sup>3)</sup>	% of UAA	3,0	13,7
		<b>1992</b>	<b>2020</b>
<b>Protected areas (partly overlapping)<sup>4)</sup></b>			
National park	% of TA	–	0,3
Nature reserves	% of TA	1,4	2,5
Protected forests	% of TA	0,2	0,2
FFH areas <sup>5)</sup>	% of TA	–	11,7
Bird reserves	% of TA	–	11,0
Biosphere areas	% of TA	–	4,2
Water protection areas	% of TA	14,8	26,8

1) As at December 31 of each year. – 2) Sum of settlements (without mining operations, open pit, mine, quarry) plus traffic. – 3) Source: Federal Ministry of Food and Agriculture. – 4) Data source: Landesanstalt für Umwelt LUBW. – 5) Protected areas according to the EU Fauna-Flora-Habitat Directive.

**Chart of land consumption**  
– Increase in settlement and transport area (SaT)<sup>1)</sup> –



1) Sum of settlements (without mining operations, open pit, mine, quarry) plus traffic. As at December 31 of each year. – 2) 2013 and 2014 average of the two years. – 3) Years 2013 to 2016 not reliable due to incomplete surveys in the course of the conversion to ALKIS and later the conversion of the coordinate system. – 4) The year 2017 is not reliable in view of existing special effects due to subsequent changes and land readjustments.

Data source: Land survey.

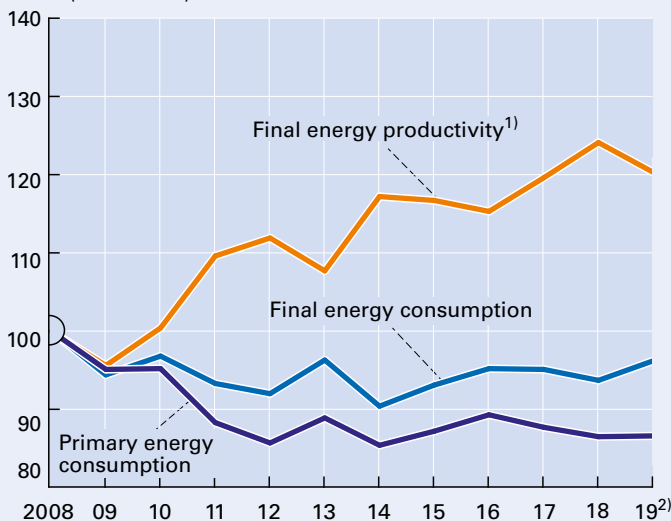
## Energy consumption and productivity

	Unit	1991	2019 <sup>1)</sup>
<b>Primary energy consumption</b>	TJ	1 514 777	1 407 893
Fossil energy sources	%	72,6	64,5
Nuclear energy	%	24,5	16,3
Renewable energy sources	%	1,9	14,2
Electricity and others	%	1,0	5,0
<b>Final energy consumption</b>	TJ	1 030 789	1 058 286
Final energy consumption of private households per inhabitant <sup>2)</sup>	TJ	303 043	322 408
	GJ	30,6	29,1
<b>Final energy productivity<sup>3)</sup></b>	EUR/GJ	.	493,8
	2008 = 100	83,9	120,3
		<b>1995</b>	<b>2019<sup>1)</sup></b>
<b>Total electricity consumption</b>	Mill. kWh	66 493	72 073
Electricity consumption of households <sup>4)</sup> per inhabitant <sup>2)</sup>	Mill. kWh	17 274	16 944
	kWh	1 690	1 529
		<b>1995</b>	<b>2020<sup>5)</sup></b>
<b>Electricity generation</b>	Mill. kWh	64 773	44 337
Fossil fuels and others <sup>6)</sup>	%	33,9	34,3
Nuclear energy	%	58,1	25,1
Renewable energy sources	%	8,0	40,6

1) Preliminary results. – 2) Annual average based on the 2011 census; VGRdL, calculation status August 2020/February 2021. – 3) Reference values for figures in EUR/GJ: gross domestic product at current prices; for figures index: gross domestic product price-adjusted, chain-linked; VGRdL, calculation status each August 2020/February 2021; own calculations. – 4) From 2011, household customers in accordance with the Energy Industry Act (EnWG). – 5) Calculation status December 2021. – 6) Coal, natural gas, fuel oil, diesel oil, petroleum coke, liquid gas, refinery gas, pumped storage water without natural inflow, non-biogenic waste, other energy sources.

## Energy consumption and final energy productivity

Index (2008 = 100)



1) Ratio of gross domestic product to final energy consumption. – 2) Preliminary figures.

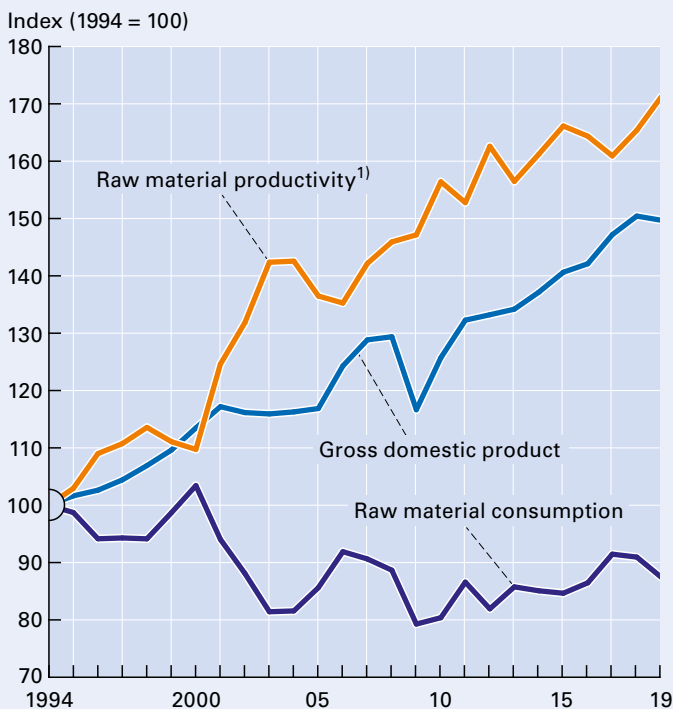
Data sources: Energy balances for Baden-Württemberg; Working Group "Environmental and Economic Accounts of the Federal States".

## Raw material consumption and productivity

		1994	2019
	Unit		
<b>Consumption of non-renewable raw materials (raw material consumption)</b>		156 928	137 200
<b>Recycled raw material extraction in the country</b>	1 000 t	140 829	112 545
Non-renewable resources	1 000 t	120 373	89 352
Energy sources	1 000 t	384	487
Mineral raw materials	1 000 t	119 989	88 865
Construction minerals	1 000 t	115 175	84 509
Import of non-renewable goods from abroad <sup>1)</sup>	1 000 t	34 423	46 626
Other goods and additional estimates <sup>1)</sup>	1 000 t	–	2 517
Receipt minus dispatch from/to other federal state(s) (non-renewable goods)	1 000 t	2 132	– 1 296
<b>Raw material productivity</b>	EUR/t	.	3 809
	1994 = 100	100	171
Export of non-renewable goods abroad <sup>1)</sup>	1 000 t	18 802	27 690

1) As of reporting year 2017, "Other goods and additional estimates" are reported separately.

## Consumption and productivity of raw materials



1) Ratio of the gross domestic product to the consumption of non-renewable resources.

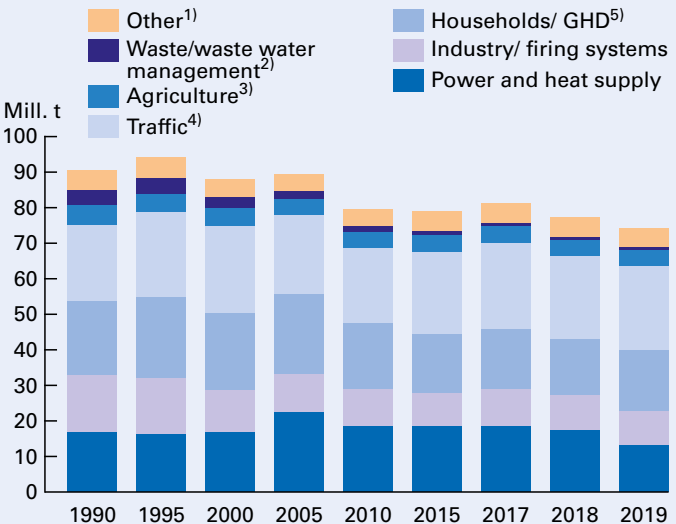
Data source: Working Group "Environmental and Economic Accounts of the Federal States".

## Greenhouse gas emissions

		2000	2019
	<b>Unit</b>		
<b>Greenhouse gas emissions (GHG)<sup>1)</sup></b>	1 000 t CO <sub>2</sub> -equivalents	88 015	74 205
	1990 = 100	97	82
per inhabitant	t	8,5	6,7
Nitrous oxide (N <sub>2</sub> O)	% of GHG	3,2	3,3
	1990 = 100	91	81
Methane (CH <sub>4</sub> )	% of GHG	7,5	5,4
	1990 = 100	78	48
Carbon dioxide (CO <sub>2</sub> )	% of GHG	87,4	88,7
	1990 = 100	99	85
Fluorinated greenhouse gases (F-gases) <sup>2)</sup>	% of GHG	1,9	2,5
	1990=100	103	114
<b>CO<sub>2</sub> emissions energy related<sup>3)</sup></b>	1 000 t	74 176	62 706
per inhabitant <sup>4)</sup>	t	7,2	5,7
<b>CO<sub>2</sub> emissions from electricity generation<sup>5)</sup></b>	1 000 t	15 367	11 334

1) From firing systems (energy related), energy production and distribution, processes and product use, agriculture, waste and waste water management. Calculation status autumn 2021. – 2) Sum of fluorinated greenhouse gas emissions (HFC,PFC, SF6 und NF3). – 3) Direct emissions, not included up- and downstream processes, excluding international air traffic. – 4) Annual average, basic census 2011. – 5) Power plants for general supply and industrial thermal power plants.

## Greenhouse gas emissions (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, F-gases) – in CO<sub>2</sub> equivalents –



1) Processes, product use, F-gases, fugitive emissions from energy sources. – 2) Domestic waste landfills, composting, mechanical-biological plants, fermentation and biogas plants, municipal and industrial sewage treatment plants, septic tanks. – 3) Agriculture without land use, land use change and forestry. – 4) Road transport, other transport (excluding international air transport), off-road transport. – 5) commercial, institutional, other small consumers.

Data source: Working Group "Environmental and Economic Accounts of the Federal States"; Calculation status autumn 2021.

## Air quality, immissions

### Number of measuring points with limit value exceedances

#### Particulate matter PM<sub>10</sub> Annual average values<sup>1)</sup>

	Unit	2019	2020
Spot measuring points close to traffic <sup>2)</sup>	Stations	0 of 6	0 of 3
Traffic monitoring stations	Stations	0 of 8	0 of 8
Urban background	Stations	0 of 25	0 of 25
Rural background	Stations	0 of 2	0 of 2

#### Particulate matter PM<sub>10</sub> Daily average values<sup>3)</sup>

	Unit	2019	2020
Spot measuring points close to traffic <sup>2)</sup>	Stations	0 of 6	0 of 3
Traffic monitoring stations	Stations	0 of 8	0 of 8
Urban background	Stations	0 of 25	0 of 25
Rural background	Stations	0 of 2	0 of 2

#### Nitrogen dioxide Annual average values<sup>1)</sup>

	Unit	2019	2020
Spot measuring points close to traffic <sup>2)</sup>	Stations	0 of 25	3 of 37
Traffic monitoring stations	Stations	4 of 8	0 of 8
Urban background	Stations	0 of 25	0 of 25
Rural background	Stations	0 of 2	0 of 2

#### Ozone 8-hour average value<sup>4)</sup>

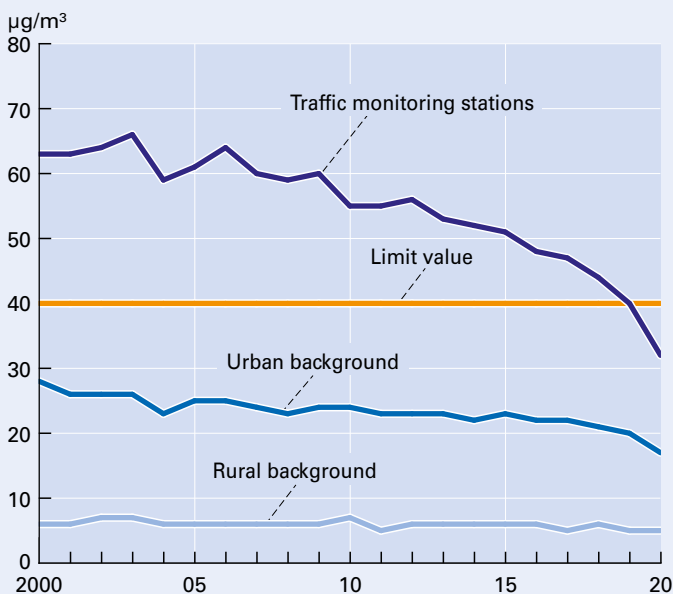
	Unit	2019	2020
Urban background	Stations	21 of 25	22 of 25
Rural background	Stations	2 of 2	2 of 2

1) Limit value: 40 µg/m<sup>3</sup>. – 2) Number, location and measurement scope of the spot measuring points change annually. Consequently, the characteristics are not comparable with other years. – 3) The daily average value of 50 µg/m<sup>3</sup> may be exceeded a maximum of 35 times per year. – 4) The target value of 120 µg/m<sup>3</sup> may be exceeded a maximum of 25 times per year (averaged over three years). Ozone is not measured at stations close to traffic.

Data source: Landesanstalt für Umwelt LUBW.

## Nitrogen dioxide (NO<sub>2</sub>) immissions

– Annual average values –



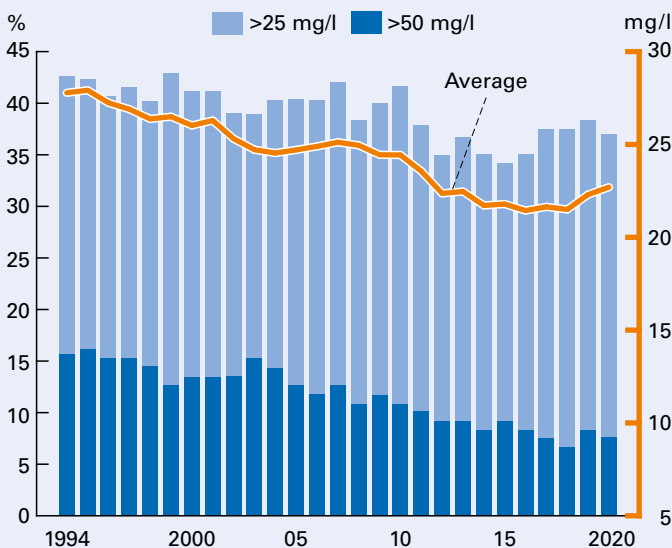
Data source: Landesanstalt für Umwelt LUBW.

## Water supply

		1991	2019
	<b>Unit</b>		
<b>Total water extraction</b>	Mill. m <sup>3</sup>	6 867,7	3 367,4
Ground and spring water	Mill. m <sup>3</sup>	758,7	658,6
Surface water	Mill. m <sup>3</sup>	6 109,0	2 708,8
<b>Water demand of the economy as a whole</b>	Mill. m <sup>3</sup>	6 150,1	2 695,1
including			
for cooling <sup>1)</sup>	Mill. m <sup>3</sup>	5 755,5	2 464,0
production water <sup>2)</sup>	Mill. m <sup>3</sup>	375,7	198,6
<b>Public drinking water supply</b>			
Distribution to households and small businesses	Mill. m <sup>3</sup>	506,5	502,1
Drinking water consumption per inhabitant and day	litres	140	125
		<b>1991</b>	<b>2021</b>
<b>Drinking water charges<sup>3)</sup></b>			
Consumption-based charge	EUR/m <sup>3</sup>	1,07	2,28
Yearly basic charge	EUR	19,80	50,13
		<b>1994</b>	<b>2020</b>
<b>Nitrate in groundwater<sup>4)</sup></b>			
Measuring points >25 mg/l	%	42,6	37,0
Measuring points >50 mg/l	%	15,7	7,6
Average	mg/l	27,8	22,7

1) 1991 exclusively single use. – 2) Without service water. 1991 including for cooling in multiple and closed loop use. – 3) Weighted by population; including value added tax. – 4) Data source: Landesanstalt für Umwelt LUBW.

### Nitrate in groundwater – Proportion of measuring points\*) with contents higher than 25 mg/l or 50 mg/l and average value –



\*) 120 area-representatively selected monitoring sites (EEA monitoring network) were examined.

Data source: Landesanstalt für Umwelt LUBW.

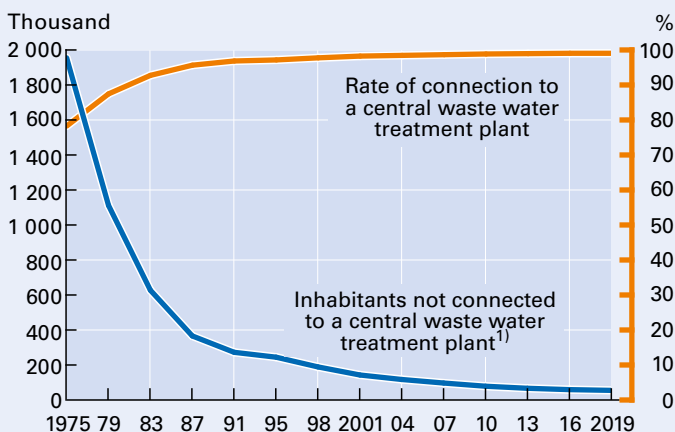


## Waste water and sewage sludge

		1991	2019
<b>Public waste water treated in central waste water treatment plants<sup>1)</sup></b>	<b>Unit</b>		
	Mill. m <sup>3</sup>	1 393,8	1 520,1
with nitrification	%	44,9	99,7
with denitrification	%	24,0	98,7
with phosphate elimination	%	41,2	96,7
Length of the public waste water collecting system	km	50 560	80 613
<b>Waste water discharges of the economy as a whole<sup>2)</sup></b>	Mill. m <sup>3</sup>	6 070,0	2 604,9
Indirect discharges	Mill. m <sup>3</sup>	102,9	64,9
Direct discharges	Mill. m <sup>3</sup>	5 967,1	2 540,0
Cooling water <sup>3)</sup>	Mill. m <sup>3</sup>	5 748,5	2 396,8
<b>Waste water charges<sup>4)</sup></b>		<b>1991</b>	<b>2021</b>
Uniform rate <sup>5)</sup>	EUR/m <sup>3</sup>	1,12	3,19
Split waste water charge			
Sewage water	EUR/m <sup>3</sup>	.	1,98
Precipitation water	EUR/m <sup>3</sup>	.	0,48
<b>Biological water quality (macrozoobenthos – saprobity)<sup>6)</sup></b>		<b>1991</b>	<b>2020</b>
Percentage of investigated and assessed sites in watercourses with status classification good or better	%	67,4	92,8
<b>Municipal sewage sludge<sup>7)</sup></b>		<b>1991</b>	<b>2020</b>
Total sewage sludge production (dry matter)	1 000 t	385,6	226,7
incinerated (mono- and co-incineration) <sup>8)</sup>	%	8,9	99,5
utilized agriculturally	%	17,8	0,3
utilized for landscaping <sup>9)</sup>	%	13,7	0,2
landfilled	%	59,6	–

1) Including public waste water treated in industrial waste water treatment plants. – 2) Public waste water treated in industrial waste water treatment plants rose by 2.3 million m<sup>3</sup> in 2019. Excluding waste water discharged to other companies. – 3) Excluding cooling water discharged into the company's own waste water treatment plants. – 4) Weighted by population. – 5) 1991: 1 111 municipalities, 2021: 29 municipalities. – 6) Data source: Landesanstalt für Umwelt LUBW. – 7) Data source: Survey of public waste water disposal. – 8) Including gasification and sewage sludge supplied to waste water treatment plants in other federal states. – 9) Recultivation, other material recycling.

## Central and local treatment of municipal waste water



1) Private waste water disposal for example small sewage treatment plants or cesspits without drainage.

Data source: Survey of public and private waste water disposal.

## Generation and treatment of waste

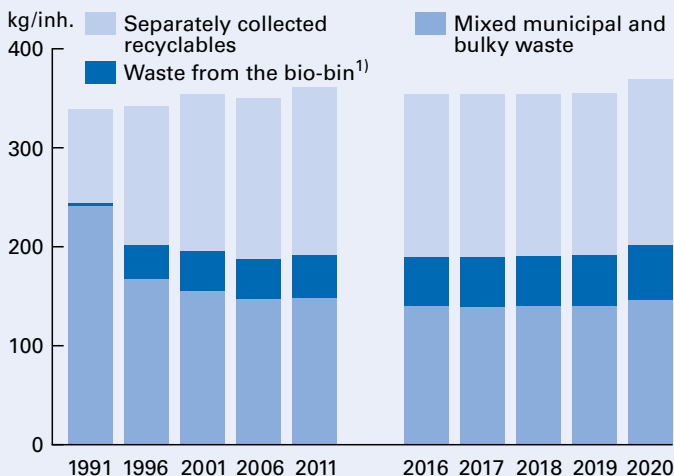
	Unit	1996	2019
<b>Total waste generation</b>	1 000 t	45 931,9	50 588,8
Landfill rate	%	24	12
Municipal waste	1 000 t	5 679,2	5 998,4
Commercial and industrial waste	1 000 t	2 031,2	2 281,8
Sludges from treatment of urban waste water	1 000 t	355,8	229,3
Construction and demolition waste (major mineral waste)	1 000 t	37 225,4	40 275,9
Landfill rate	%	23	15
Hazardous waste	1 000 t	640,4	1 803,4
		<b>1996</b>	<b>2020</b>
<b>Waste generated by households</b>	1 000 t	3 538,2	4 087,7
per inhabitant	kg	342	368
Landfill rate	%	36	-
Mixed municipal and bulky waste per inhabitant	kg	167	146
Separately collected recyclables per inhabitant	kg	141	168
Waste from the bio-bin per inhabitant	kg	34	55
		<b>1996</b>	<b>2019</b>
<b>Waste treatment facilities (selected types)</b>			
Landfills	Number	605	309
Quantity of waste landfilled	1 000 t	10 822,5	6 352,4
Incineration plants <sup>1)</sup>	Number	8	41
Quantity of waste incinerated	1 000 t	574,7	4 127,0
Plants for biological treatment	Number	96	98
Quantity of waste treated	1 000 t	674,7	1 123,4
Sorting plants	Number	36	68
Quantity of waste treated	1 000 t	615,2	2 542,3

1) 2019: including combustion plants with energy recovery from waste.

Data source: Surveys of waste treatment according to §§ 3 to 5 of the Environmental Statistics Act and waste balance Baden-Württemberg.

## Waste generated by households

– Risings per inhabitant –



From 2011: Population based on data from the 2011 Census. – 1) No year-round or area-wide coverage.

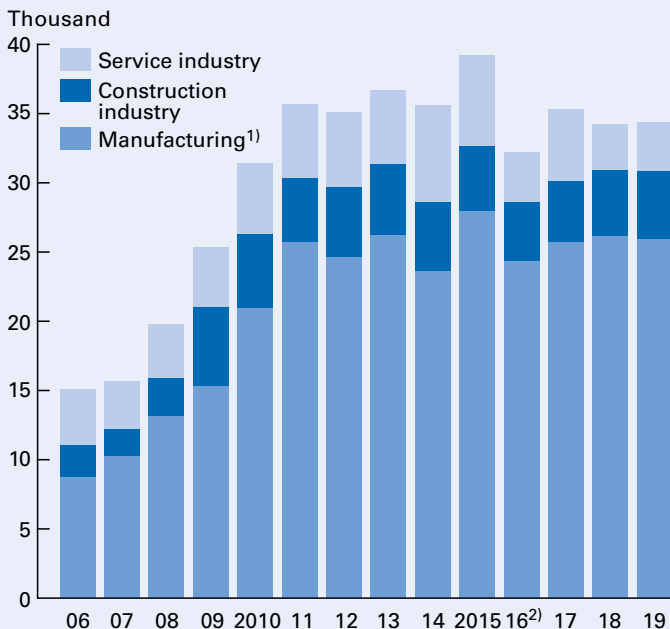
Data source: Waste balance Baden-Württemberg.

## Environmental economics

		1996	2019
	<b>Unit</b>		
<b>Expenditure on environmental protection in total</b>	Mill. EUR	4 454,4	8 331,9
GDP share	%	1,7	1,6
<b>Public expenditure</b>			
Waste management	Mill. EUR	1 401,2	2 567,3
Investments in tangible fixed assets	%	19,3	32,3
Current expenditure	%	80,7	67,7
Sewage disposal	Mill. EUR	1 572,8	2 103,2
Investments in tangible fixed assets	%	56,0	42,0
Current expenditure	%	44,0	58,0
<b>Expenditure on environmental protection in the manufacturing sector<sup>1)</sup></b>	Mill. EUR	1 480,4	3 661,3
Investments <sup>2)</sup>	%	14,5	18,4
Current expenditure <sup>3)</sup>	%	85,5	81,6
		<b>1997</b>	<b>2019</b>
<b>Turnover of goods, construction and services for environmental protection<sup>2)</sup></b>	Mill. EUR	1 196,9	12 273,1
<b>Environmental Management<sup>4)</sup></b>			
EMAS-registered companies and organizations	Number	353 <sup>5)</sup>	347 <sup>6)</sup>

1) For better comparability, data on the manufacturing sector also from 2008 excluding the economic sections wastewater and waste disposal and pollution abatement (WZ 2008). – 2) Since 2006 including the environmental section Climate Protection. – 3) Expenditure on the operation of own facilities and other expenses. – 4) Data source: Landesanstalt für Umwelt LUBW. – 5) Value for 2007. – 6) As of November 10, 2021.

## Employees in environmental protection within the economic sectors



1) Including mining and quarrying of stone and earth. – 2) From 2016 excluding smaller operations (approx. 300 units), due to changed legal situation.

Data source: Survey of goods, construction and services for environmental protection.

## Contact:

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