



FURTHER GRI INFORMATION

PRODUCTION AND SUPPLIER NETWORK

BMW Group Carbon Footprint

in t CO ₂ / CO ₂ e	2019	2020	2021	2022
Total emissions ¹	133,552,843	118,491,889	122,539,929	117,372,143
SCOPE 1: DIRECT GREENHOUSE GAS EMISSIONS				
Total emissions	678,403	678,967	699,713	694,057
BMW Group locations ^{2,3}	586,638	604,620	631,304	614,117
company vehicles ^{5,6}	85,667	72,554	66,442	76,491 ⁷
company-owned planes	6,098	1,793	1,967	3,449
SCOPE 2: INDIRECT GREENHOUSE GAS EMISSIONS				
Total emissions	354,095	130,090	134,849	91,300
Electricity / heat purchased by BMW Group locations ^{2,3,4}	354,095	130,090	134,849	91,300

¹ The emissions listed account for approximately 90 % of the BMW Group's total Scope 1 to Scope 3 emissions.

² Carbon emissions (excluding climate-changing gases other than carbon dioxide) generated by vehicle production (BMW Group plants including BMW Brilliance Automotive Ltd. and Motorrad, excluding partner plants and contract manufacturing) and by other BMW Group locations not directly related to production (e.g. research centres, sales centres, office buildings).

³ Calculation of Scope 1 and Scope 2 emissions, using the operational control approach in accordance with the GHG Protocol. Leased space without the direct influence of the BMW Group on energy supply is therefore not included.

⁴ Scope 2 emissions calculated using the market-based method in accordance with the GHG Protocol Scope 2 guidance; mainly the use of the VDA emissions factors for electricity, district heating and fuel (each in the current valid version: 12/2022) and in some cases the use of local emissions factors; alternative calculation using the location-based method: 1,187,339 t CO₂. The decrease in carbon emissions compared to the previous year is mainly due to the adjustment of the emission factors.

⁵ Includes all refuelling of function-related vehicles within Germany and at the international test sites of Oxnard and Woodcliff Lake (USA), Arjeplog (Sweden) and Miramas (France). All European refuellings of company vehicles registered in Germany are also included. For systemic reasons, the refuellings of company vehicles include both business and private trips, except refuelling paid for by employees themselves.

⁶ Emissions from company cars (Scope 1) are also partially included under employee commuting and utilisation phase (both Scope 3). A system-related distinction is not currently possible.

⁷ The year-on-year increase in emissions is particularly due to the expansion of refuelling authorisations from Germany to Europe in November 2021.

**BMW Group carbon footprint (continued from previous page)**

in t CO ₂ / CO ₂ e	2019	2020	2021	2022
SCOPE 3: INDIRECT GREENHOUSE GAS EMISSIONS				
Total emissions	132,520,346	117,682,832	121,705,368	116,586,786
Transport logistics ¹	1,570,397	1,322,859	1,878,910	2,274,178
Business trips ²	129,646	25,217	29,765	66,170 ³
Employee commuting ^{4, 5}	146,298	166,586	139,999	145,284
Purchased goods and services ⁶	18,505,921	16,234,959	18,534,765	19,758,702 ^{8, 9}
Utilisation phase ^{4, 7}	110,899,066	98,782,354	99,805,490	92,947,849
Disposal ⁶	1,269,018	1,150,857	1,316,438	1,394,603 ⁸

¹ From 2022, application of the international GLEC Framework V 2.0 directive, along with CleanCargo and DIN EN 16258 still being in force. Due to the resulting adjustments to emissions factors, the average CO₂e intensity has increased by approximately 15 %. As a result, the prior-year figures are not directly comparable. Due to the systems in place, the retroactive adjustment of prior-year figures is not possible.

² Includes business trips made by plane, train and rental cars.

³ Since the 2022 reporting year, the flight date has been used instead of the date on which the ticket was created to determine carbon emissions from flights. Due to the systems in place, the prior-year figures cannot be adjusted. This leads to a one-off double counting of carbon emissions from flights (approx. 3,700 tonnes) booked in 2021 that took place in 2022. The increase in carbon emissions from business trips compared to the two previous years is also attributable to the lifting of travel restrictions imposed during the Covid-19 pandemic.

⁴ Emissions from company cars (Scope 1) are also partially included under employee commuting and utilisation phase (both Scope 3). A system-related distinction is not currently possible.

⁵ The figures from 2020 onwards are not directly comparable with previous years due to the improved data basis. In some cases, figures have been extrapolated based on data collected at major national and international BMW Group locations.

⁶ Based on life cycle assessments in accordance with ISO 14040/44 of representative vehicles of the product lines using the LCA tool GaBi provided by the company Sphera (including the climate-impacting gases CO₂, CH₄, N₂O, SF₆ and NF₃). Corresponding with the CO₂e emissions, the energy consumption values resulting from the life cycle assessments (lower calorific value) are as follows: approx. 92,749,162 MWh in the "Purchased goods and services" category and around 706,565 MWh in the "Disposal" category.

⁷ The absolute emissions in the utilisation phase are based on the [carbon emissions for the new vehicle fleet worldwide, including upstream emissions](#). The total value in tonnes of carbon is the result of multiplying the average value with all BMW Group vehicles sold in the reporting period and an assumed average mileage of 200,000 km (as per VDA 900-100).

⁸ The year-on-year increase in carbon emissions is due to the strong sales growth for electrified vehicles, particularly all-electric vehicles.

⁹ The carbon reductions achieved in the year under report resulting from measures agreed with suppliers were not taken into account when calculating the carbon footprint. See [carbon emissions in the supply chain](#).

**Energy consumption^{1,2}**

in MWh	2019	2020	2021	2022
TOTAL ENERGY CONSUMPTION				
Total energy consumption	6,348,009	6,040,824	6,476,955	6,295,990
TOTAL ENERGY CONSUMPTION BY AREA				
Vehicle production	5,226,227	4,946,865	5,329,550	4,750,321
Motorcycle production	120,583	114,072	125,450	101,574
Non-manufacturing sites	1,001,199	979,887	1,021,955	906,175
CHP losses ³	-	-	-	537,919
TOTAL ENERGY CONSUMPTION BY SOURCE				
Electricity	2,653,855	2,320,314	2,453,215	2,542,434
Community heating	367,040	274,484	284,763	307,163
Community cooling	33,688	33,322	31,882	28,455
Natural gas	3,117,505	3,206,948	3,517,068	3,253,638
of which CHP losses	425,796	498,299	508,318	477,588
Biogas (landfill gas)	164,957	192,911	177,564	144,266
of which CHP losses	68,560	65,065	67,038	60,331
Solar (photovoltaics)	1,703	2,316	2,344	2,209
Other fossil fuels	7,760	9,368	8,908	16,730
Other biogenic fuels	1,501	1,161	1,211	1,095

¹ Energy consumption generated by vehicle production (BMW Group plants including BMW Brilliance Automotive Ltd. und Motorrad, excluding partner plants and contract manufacturing) and by other BMW Group locations not directly related to production (e.g. research centres, sales centres, office buildings).

² Upper calorific value.

³ CHP losses refer to the losses resulting from converting a fuel source into electricity and heat in a combined heat and power plant (CHP plant). These are listed separately as of the 2022 reporting year. Energy consumption for the automotive production, motorcycle production and non-manufacturing sites was not adjusted retroactively for previous years. As a result, the figures for 2022 are not directly comparable with previous years.

**Transport logistics: transport modes and CO₂e emissions¹**

	2018		2019		2020		2021		2022	
INBOUND (MATERIAL SUPPLY OF THE PLANTS AND SPARE PARTS DELIVERY)²										
Transport volume in million tkm	14,491		15,634		13,623		23,244		27,058	
CO ₂ e emissions in t	589,730		577,077		472,290		820,226		999,940	
OUTBOUND (DISTRIBUTION OF VEHICLES AND SPARE PARTS DELIVERY)³										
Transport volume in million tkm	25,777		26,489		23,622		28,497		27,501	
CO ₂ e emissions in t	974,189		993,320		850,569		1,058,685		1,274,238	
TOTAL (INBOUND AND OUTBOUND)										
Transport volume in million tkm	40,268		42,123		37,245		51,741		54,559	
CO ₂ e emissions in t	1,563,919		1,570,397		1,322,859		1,878,910		2,274,178	
PERCENTAGE SHARE OF TRANSPORT MODES IN TOTAL (INBOUND AND OUTBOUND) IN TERMS OF TRANSPORT VOLUME AND CO₂e EMISSIONS										
	tkm	g CO ₂ e	tkm	g CO ₂ e	tkm	g CO ₂ e	tkm	g CO ₂ e	tkm	g CO ₂ e
Sea in %	75.0	50.3	73.0	47.8	74.7	52.0	77.2	51.1	77.1	43.4
Road in %	17.6	31.1	20.1	37.5	17.1	33.6	14.2	27.2	14.4	31.7
Rail in %	6.5	2.3	6.3	2.6	7.7	3.8	7.6	3.8	7.3	5.5
Air in %	0.9	16.3	0.6	12.2	0.5	10.6	1.0	17.9	1.2	19.4

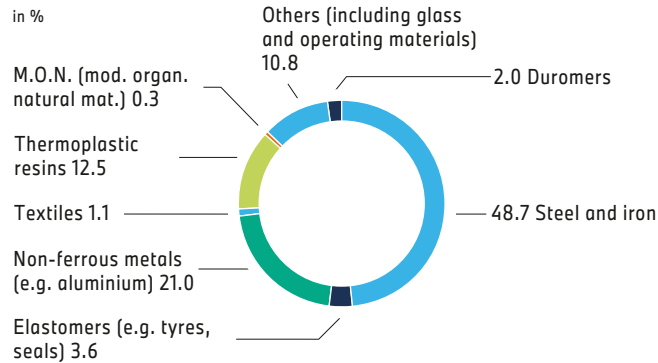
¹ From 2022, application of the international GLEC Framework V 2.0 directive, along with CleanCargo and DIN EN 16258 still being in force. Due to the resulting adjustments to emissions factors, the average CO₂e intensity has increased by approximately 15 %. As a result, the prior-year figures are not directly comparable. Due to the systems in place, the retroactive adjustment of prior-year figures is not possible.

² Figures relate to vehicle production (BMW Group including BMW Brilliance Automotive Ltd. and partner plants, excluding contract manufacturing) and spare parts deliveries to centralised parts distribution centres. In some cases, figures have been extrapolated for individual months.

³ Figures relate to vehicle production (BMW Group including BMW Brilliance Automotive Ltd., contract manufacturing and parts for partner plants) and spare parts deliveries to distribution centres in markets worldwide as well as to dealerships in certain markets.



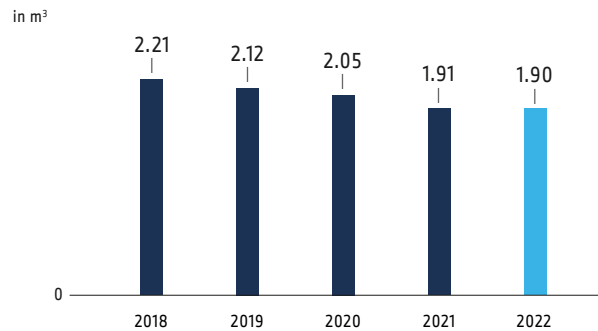
Average distribution of materials in BMW Group vehicles^{1,2}



¹ Calculated using unit-adjusted averages for the BMW 1 Series, 2 Series, 3 Series, 4 Series, 5 Series, 6 Series, 7 Series, 8 Series, X1, X2, X3, X4, X5, X6, X7, Rolls-Royce, MINI, MINI Countryman and M-GmbH as well as the BEV vehicles i3, i4, i7, iX, iX1, iX3, MINI E and PHEV versions.

² The number of vehicles produced (BMW Group plants, including BMW Brilliance Automotive Ltd., partner plants and contract manufacturing) decreased year-on-year to around 2.38 million vehicles (2021: around 2.46 million). Based on an average vehicle weight of BMW Group vehicles of around 1.9 tonnes, the total weight of input materials is around 4.3 million tonnes. To calculate the individual material flows, the total weight is multiplied by the average distribution of the materials in BMW Group vehicles.

Potable water consumption per vehicle manufactured^{1, 2, 3, 4}



¹ Efficiency ratio calculated on the basis of potable water consumption in vehicle production (BMW Group manufacturing sites incl. BMW Brilliance Automotive Ltd., excluding partner plants and contract manufacturing) divided by the total number of vehicles produced (BMW Group manufacturing sites incl. BMW Brilliance Automotive Ltd. and partner plants, excluding contract manufacturing).

² Potable water consumption refers to water obtained from an external water company. If a site does not obtain any water from an external water company, the main source is considered equivalent to potable water. This applies to the BMW Group plants in San Luis Potosí, Mexico and Araquari, Brazil, where groundwater is the main source.

³ Potable water consumption per vehicle produced replaces the previously reported efficiency indicator of water consumption per vehicle produced. The previous year's figures have been adjusted for comparison purposes (2018 prior to adjustment: 2.39; 2019 prior to adjustment: 2.32; 2020 prior to adjustment: 2.25; 2021 prior to adjustment: 2.15).

⁴ Value of the base year 2016 to the target reduction of -25% by 2030: 2.00 (2016 prior to adjustment: 2.25).

Water consumption¹

in m ³	2018	2019	2020	2021	2022
Water consumption	5,425,073	5,417,428	4,722,310	4,924,477	4,840,161
of which potable water in %	90.4	87.4	86.3	85.1	84.0
of which groundwater in %	9.6	12.6	13.6	14.6	15.7
of which surface water in %	0.0	0.0	0.0	0.0	0.0
of which rainwater in %	0.0	0.0	0.1	0.3	0.3

¹ Water consumed by vehicle production (BMW Group plants, including BMW Brilliance Automotive Ltd., excluding partner plants and contract manufacturing).



Waste¹

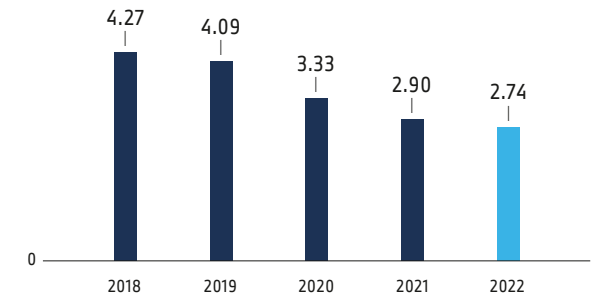
in t	2018	2019	2020	2021	2022
Total waste	789,817	780,911	775,459	829,498	818,387
of which materials for recycling ²	779,911	771,162	768,292	822,848	812,274
of which waste for disposal	9,906	9,749	7,168	6,650	6,113

¹ Waste generated by automobile production (BMW Group plants, including BMW Brilliance Automotive Ltd., excluding partner plants and contract manufacturing.)

² Includes both recycling and thermal utilisation.

Waste for disposal per vehicle produced^{1,2}

in kg

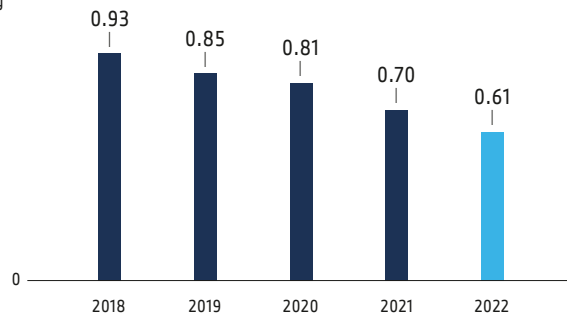


¹ Efficiency ratio calculated on the basis of waste for disposal in vehicle production (BMW Group plants incl. BMW Brilliance Automotive Ltd., excluding partner plants and contract manufacturing) divided by the total number of vehicles produced (BMW Group plants incl. BMW Brilliance Automotive Ltd. and partner plants, excluding contract manufacturing).

² Value of the base year 2016 to the target reduction of -25 % by 2030: 3.51

VOC solvent emissions per vehicle produced^{1,2}

in kg



¹ Efficiency ratio calculated on the basis of VOC solvent emissions (volatile organic compounds = VOC) in vehicle production (BMW Group plants including BMW Brilliance Automotive Ltd., excluding partner plants and contract manufacturing) divided by the total number of vehicles produced (BMW Group plants including BMW Brilliance Automotive Ltd. and partner plants, excluding contract manufacturing).

² Value of the base year 2016 to the target reduction of -25 % by 2030: 1.14



Sustainability assessment¹ of relevant supplier locations

	2018	2019	2020	2021	2022
Proportion of audited supplier sites of production-related material with a contract volume greater than € 2 million in %	97	95	98	98	97
Proportion of supplier locations with identified sustainability deficits and corrective measures agreed upon in % ²	48	62	64	61	67
Number of supplier locations not awarded contracts because they fail to meet the BMW Group's sustainability or other requirements	193	153	108	81	98

¹ Basis: Industry-specific sustainability questionnaire.

² Since the 2022 reporting year, an expanded definition is used to determine the key indicator. As a result, the key indicator is not directly comparable with prior-year figures.

Due to the systems in place, the retroactive adjustment of prior-year figures is not possible. As a result of the change in definition, there was an increase in the 2022 value of around 10 percentage points.

Indication of potential violations in the supply chain

	2018	2019	2020	2021	2022
Number of indications of potential violations of our sustainability principles received through our reporting channels	9	2	3	8	8
of which number of indications that were clarified during the reporting year	9	2	2	8	4

EMPLOYEES AND SOCIETY

Employees at end of year¹

	2018	2019	2020	2021	2022
Group	134,682	126,016	120,726	118,909	149,475
Automotive	121,994	113,719	108,676	106,928	137,056
Motorcycles	3,709	3,503	3,474	3,418	3,711
Financial Services	8,860	8,684	8,473	8,466	8,616
Other	119	110	103	97	92
Employees with fixed-term contracts ²	4,638	3,489	2,892	2,503	15,039
Employees in part-time employment ³	6,299	6,318	6,433	6,846	7,315

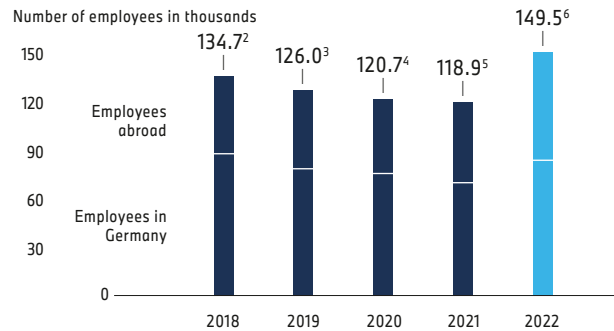
¹ The term "employee" has been redefined with effect from the reporting year 2020 (for definition, see [Glossary](#)).

For the 2018 period, the percentage of employees no longer covered by the new definition is between 7.5 % and 8.0 %.
From 2022 incl. BMW Brilliance.

² Of this figure, around 30 % of women at BMW AG (for system-related reasons, this data is only collected for BMW AG).

³ Permanent and fixed-term employees.

Employees in Germany and abroad¹



¹ The term "employee" has been redefined with effect from the reporting year 2020 (for definition, see [Glossary](#)).

For the 2018 period, the percentage of employees no longer covered by the new definition is between 7.5 % and 8.0 %.

² Of this figure, 35.3 % clock-controlled production employees of the BMW Group.

³ Of this figure, 38.2 % clock-controlled production employees of the BMW Group.

⁴ Of this figure, 37.9 % clock-controlled production employees of the BMW Group.

⁵ Of this figure, 38.0 % clock-controlled production employees of the BMW Group.

⁶ Of this figure, 42.5 % clock-controlled production employees of the BMW Group.

**Percentage of workforce represented by a trade union or falling under collective bargaining agreements¹**

in %	2018	2019	2020	2021	2022
Germany (BMW AG) ²	100	100	100	100	100
UK (Hams Hall, Oxford, Swindon, Goodwood plants, Transport and Logistics Centre (Bognor Regis))	85	85	84	83	82
China (Dadong, Tiexi, Lydia plants)	100	100	100	100	100
Austria (Steyr plant) ²	100	100	100	100	100
South Africa (Rosslyn plant, Sales, IT, Financial Services)	62	59	63	70	70
USA (Spartanburg plant, no collective bargaining agreements in place)	0	0	0	0	0
Mexico (San Luis Potosi plant) ²	-	100	100	100	100

¹ Status: 31.12.2022.² Excluding senior management and representatives.

↗ GRI Index: 2-303

Alternative ways of working at BMWAG¹

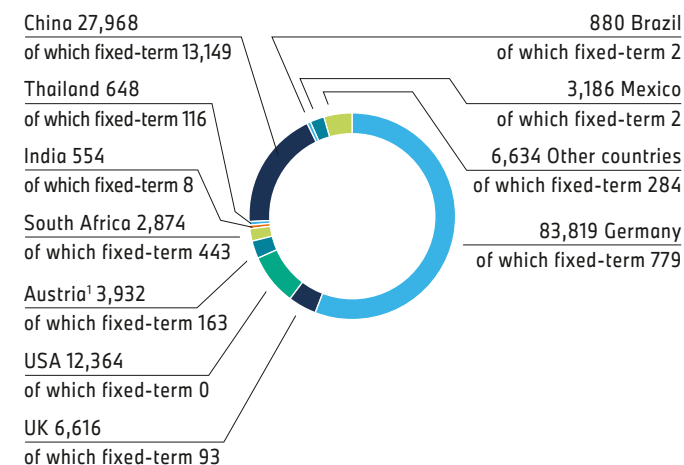
Number of employees	2018	2019	2020	2021	2022
Part-time employment ²	5,000	5,440	5,568	5,951	6,388
in % of total number of employees	5.6	6.6	7.0	7.7	7.8
Teleworking ³	34,339	36,208	43,309	41,180	43,707
in % of total number of employees ⁴	66.1	70.8	87.2	84.3	85.9
Vollzeit Select model	5,508	5,474	4,747	3,736	4,170
in % of total number of employees	6.1	6.6	6.0	4.8	5.1
Sabbaticals	648	764	653	464	493
in % of total number of employees	0.7	0.9	0.8	0.6	0.6
Parental leave	3,675	4,082	4,158	4,211	4,183
in % of total number of employees	4.1	4.9	5.2	5.4	5.1

¹ The term "employee" has been redefined with effect from the reporting year 2020 (for definition, see ↗ Glossary).

For the 2018 period, the percentage of employees no longer covered by the new definition is between 7.5 % and 8.0 %.

² Of which 3,927 were female (61%). For systemic reasons, this number is only calculated for BMW AG.³ Only workers in administrative positions who engaged in teleworking.⁴ Statistical population not including apprentices, interns, thesis students working at the company and doctoral candidates.**Number of employees per country with production site(s)**

Number of employees

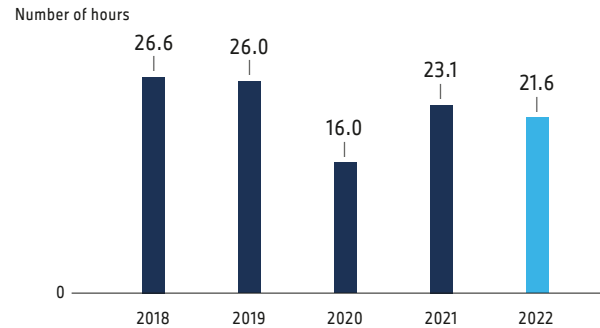
¹ Including the Eastern Europe sales region



Average training hours at the BMW AG Academy, by employee category

Employee category	2020	2021	2022
Non-tariff employees	14.1	30.7	26.4
"Meister" (master craftsmen)	21.1	27.0	43.1
Tariff	7.1	10.8	14.1

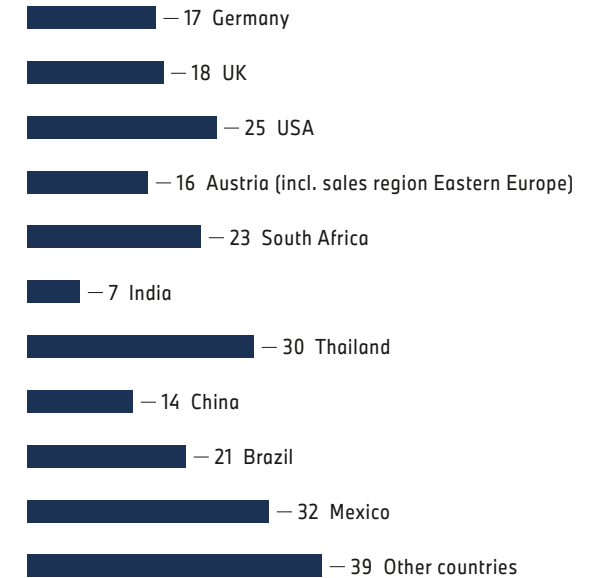
Average number of hours of training and further education per employee of the BMW Group¹



¹ Training for BMW Group employees at consolidated and non-consolidated subsidiaries worldwide. Data is collated on the basis of direct input by participants and, to a small extent, by extrapolation. Data also includes e-learning formats.
 ↗ GRI Index 404-1

Share of women in the workforce by country with production site(s)

in %



Total number of employees leaving BMWAG, by reason for leaving¹

Number	2018	2019	2020	2021	2022
Total	2,247	2,794	4,535	3,720	3,191
Part-time retirement, retirement, death	1,314	1,700	1,884	1,938	2,110
Voluntarily left company (termination or suspension of employment contract by employee)	873	1,029	2,601 ²	1,749 ²	1,011
Dismissed by employer	60	65	50	33	70

¹ Figures refer to employees with permanent contracts.

² Increase mainly due to a set of personnel measures..

Share of local employees in management positions at major company locations¹

	2018	2019	2020	2021	2022
Germany	99.5	99.7	99.7	99.8	99.7
UK	86.9	87.5	89.8	89.5	88.8
USA	88.3	87.4	89.1	88.3	89.2
Austria	85.6	82.3	78.7	79.1	77.7
South Africa	82.8	82.7	85.9	85.4	88.4
India	74.4	82.1	68.4	78.4	80.0
Brazil	77.6	78.2	84.9	85.1	88.2
China ²	76.7	73.7	78.8	82.2	85.1
Thailand	56.8	57.1	57.8	60.0	65.2
Mexico ³	-	48.4	62.9	67.8	72.7

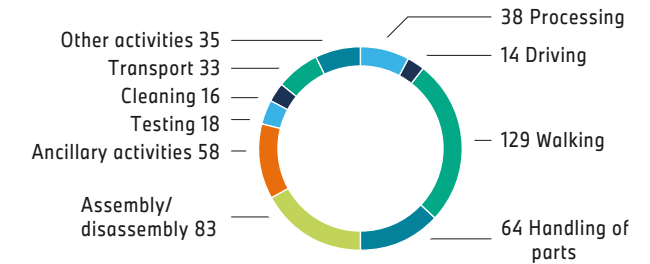
¹ "Local" refers to managers with local contracts. People deployed to work at the location who do not have a local employment contract are not included. These are reflected in the difference to 100 in each case.

² Data for all years including BMW Brilliance Automotive Ltd.

³ Start of production 06/2019.

Principal hazard spots¹

Number of accidents



¹ Number of workplace accidents resulting in at least 1 lost day per 1 million hours worked