



Climate and environmental data 2023

About this report

Sustainability is GIZ's guiding principle and forms the basis for our contributions to shaping a society that is fit for the future. We compile and analyse all the most important climate and environmental data every year to gain a better understanding of our environmental sustainability and continuously improve our performance. Externally validated information about our activities in Germany is provided by the Eco-Management and Audit Scheme (EMAS). We have also developed our own environmental management tool, the Corporate Sustainability Handprint® (CSH), as a source of data on our operations in other countries.

GIZ has gathered climate and environmental data for its German locations since 1999. Following the adoption of EMAS in 2013, environmental figures are now checked each year by an accredited environmental consultant to ensure that they are complete and plausible.

In the same year, we piloted systematic data collection in our partner countries. Annual data compilation has been mandatory since 2018. Further information about the methods we use to calculate climate and environmental data can be found in the section entitled 'Notes on calculation methods'.

The publication 'Climate and Environmental Data 2023' is aimed at GIZ employees and anyone outside the company with a professional interest in our environmental performance. This document includes all the most important climate and environmental data for our sites in both Germany and our partner countries for the period from 1 January to 31 December 2023. The figures for Germany are the totals as at 31 May 2024. Previous publications may show other data.

Summary of climate and environmental data

Workforce	Germany					Abroad				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Total number of internal staff [FTE]	5,183	5,782	5,769	6,036	6,272	Es gibt keine Unterscheidung zwischen internen und externen Mitarbeiter*innen				
Total number of external staff [FTE]	315	234	245	240	229					
Total number of internal and external staff [FTE]	5,497	6,016	6,014	6,276	6,502	18,228	18,962	19,945	20,093	19,921

Summary of GHG emissions ¹	Germany					Abroad				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Scope 1										
Heating in t CO ₂ e	2,760	2,227	1,079	864	515	1,850	1,975	1,918	1,007	1,243
Fuel for company vehicles in t CO ₂ e	23	13	9	8	10	11,550	8,236	9,248	10,741	9,627
Coolants in t CO ₂ e	31	23	8	13	45	4,048	3,849	4,111	4,055	4,240
Generators in t CO ₂ e	3	7	6	6	0	1,765	2,303	1,379	2,641	2,287
Scope 2										
Electricity ² in t CO ₂ e	361	282	235	185	224	9,693	7,582	8,044	8,416	9,072
District heating in t CO ₂ e	177	168	211	180	177	351	563	423	218	247
District cooling in t CO ₂ e	47	36	50	46	47	76	0,5	0	0	0

¹ Due to improved data quality, these figures partly deviate from previously published data. This applies in particular to the year 2022.

² Emissions from electricity were calculated using the market-based method domestically. The location-based method is used abroad.

Emissions from sourcing biomethane ³	Germany					Abroad				
	2019	2020	2021	2022	2023	No biomethane is purchased for heating abroad				
Heating in t CO ₂ e	no supply of biomethane	no supply of biomethane	148	118	158					
Fuel and energy-related emissions in t CO ₂ e	no supply of biomethane	no supply of biomethane	53	42	57					

³ Since 2021, biomethane has been purchased for heating at most locations in Germany.

Electricity ⁴	Germany					Abroad				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Electricity (location-based method) in t CO ₂ e	4,197	4,329	4,013	3,801	3,965	9,693	7,582	8,044	8,416	9,072
Electricity (market-based method) in t CO ₂ e	361	282	235	185	224	Data not mapped in the CSH				

4 Updated data results in changes to the data. Outside Germany, we exclusively use the location-based method. No data are available for calculating the market-based method.

Scope 3	Germany					Abroad				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Purchased goods and services ⁵ in t CO ₂ e	132,223	136,910	155,341	139,122	138,011	61,789	54,815	84,035	68,151	67,975
Fuel and energy-related emissions ⁶ in t CO ₂ e	312	368	288	241	276	8,276	6,322	5,652	6,876	6,505
Business trips in t CO ₂ e	23,275	3,179	2,798	13,239	17,602	86,254	19,481	22,724	59,531	78,362
Commuting ⁷ in t CO ₂ e	3,042	1,587	1,078	4,903	3,926	10,008	4,396	4,624	13,974	13,854
Events in t CO ₂ e	Data not mapped		36	81	407	Data not mapped in the CSH				

5 Estimate based on financial data. These are only emissions from purchased services since these are essential for GIZ. This excludes construction services

6 Due to improved data quality, figures may differ in part from previously published data. An estimate was made for foreign countries for the years 2019 and 2020.

7 Commuter traffic abroad was roughly estimated for 2019 using flat-rate values. From 2020, the values are derived from an extrapolation based on the results of an internal survey of selected locations abroad

Achievement of SBTi target ⁸	Entire company				
	2019	2020	2021	2022	2023
Scope 1 + 2 in t CO ₂ e	32,709	27,265	26,721	28,380	27,735
Scope 3 in t CO ₂ e	325,157	227,058	276,540	306,037	326,510

8 The totals deviate in part from previously communicated figures because data quality has improved thanks to more accurate recalculations.

Other Airborne Emissions ⁹	Germany					Abroad				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
NO _x (nitrogen oxides) in kg	8,822	4,394	2,951	13,196	13,536					
SO ₂ (sulfur dioxide) in kg	4,964	2,036	1,550	4,913	5,121					Data not mapped in the CSH
PM 10 (coarse particulate matter) in kg	233	82	76	859	698					

9 Data for 2021 and 2022 have been recalculated based on new data.

Offsets ¹⁰	Germany					Abroad				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Climate neutralized t CO ₂ e	29,721	7,534	5,779	19,778	23,229	0	43,990	53,500	93,752	111,583

10 Since we cannot reduce all GHG emissions from different sources, we offset the emissions that are directly related to our activities. Scope 1 and 2 emissions have been offset for domestic operations since 2013, while foreign emissions have been offset since 2020.

In the area of Scope 3 emissions, we have been offsetting emissions from business travel and commuter traffic in Germany since 2013. In 2020, the offsetting of business travel was expanded to include foreign countries. In addition, emissions from events in

Germany and energy-related emissions in Germany and abroad were added in 2021. The other emission sources are beyond the control of GIZ and can in part only be recorded by means of rough estimates. They are not offset.

Mobility	Germany					Abroad				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Total flights in 1,000 km	69,621	9,515	8,252	41,831	56,738	361,454	78,670	81,902	250,994	312,600
Distance flown per staff member in km	13,434	1,646	1,430	6,930	9,046	19,830	4,149	4,106	12,492	15,692
Total rail trips in 1,000 km	12,357	3,195	1,833	6,447	8,768					
Distance travelled by rail per staff member in km	2,384	553	318	1,068	1,398					
Total trips using company vehicles in 1,000 km	137	107	114	147	108					Data not mapped in the CSH
Total distance travelled in 1,000 km	82,115	12,817	10,199	48,426	65,613					
Distance travelled per staff member in km	15,845	2,217	1,768	8,023	10,461					

Energy Consumption ¹¹	Germany					Abroad				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Total energy consumption										
Total energy consumption in kWh	24,114,794	23,015,555	23,240,630	20,429,619	20,570,353	80,277,407	66,123,732	66,416,385	75,989,840	71,491,450
Total energy consumption per staff member in kWh	4,387	3,826	3,864	3,255	3,164	4,404	3,487	3,330	3,782	3,589
Electricity										
Total electricity consumption in kWh	10,088,941	9,793,714	9,078,147	8,598,906	8,971,115	19,717,828	15,944,268	16,329,602	17,620,037	18,719,247
Total electricity consumption per staff member in kWh	1,835	1,628	1,509	1,370	1,380	1,082	841	819	876,924	940
Green electricity percentage	93%	94%	94%	94%	93%	Data not mapped in the CSH				
Heating/ Cooling energy										
Total heating/cooling energy in kWh	13,925,530	13,148,410	14,100,941	11,775,697	11,539,220	7,083,143	7,382,315	6,464,927	3,926,957	4,363,030
Total heating/cooling energy per staff member in kWh	2,533	2,186	2,345	1,876	1,775	389	389	324	195	219
Percentage of heating energy from renewable sources	12%	19%	59%	57%	71%	Data not mapped in the CSH				
Fuel for company vehicles and generators										
Total energy consumption from motor vehicle fuel in kWh	94,826	49,087	50,837	36,309	60,018	46,036,759	33,483,739	37,654,530	43,728,348	38,866,303
Total energy consumption from motor vehicle fuel per staff member in kWh	18	8	9	6	10	2,526	1,766	1,888	2,176	1,951
Total energy consumption by generators in kWh	5,498	24,343	10,705	18,707	0	7,439,677	9,313,409	5,967,327	10,714,498	9,542,870
Total energy consumption by generators per staff member in kWh	1	4	2	3	0	408	491	299	533	479

11 Due to improved data quality, these figures differ in part from previously published data.

Water Consumption ¹²	Germany					Abroad				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Total drinking water consumption in m ³	50,678	33,535	30,465	27,527	26,429	608,612	490,075	361,484	395,006	364,576
Total drinking water consumption per staff member in l	9,219	5,574	5,065	4,386	4,065	33,390	25,845	18,124	19,659	18,301

12 Due to improved data quality, some of these figures differ from previously published data.

Paper Consumption ¹³	Germany					Abroad				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Paper consumption (sheets)	11,897,087	6,225,693	5,140,153	4,738,544	3,589,316	73,673,934	43,849,811	46,127,561	42,972,940	36,958,001
Per-capita paper consumption (sheets per staff member)	2,164	1,035	855	755	552	4,042	2,313	2,313	2,139	1,855
Percentage of recycled paper used	95%	100%	100%	100%	100%	15%	16%	13%	22%	24%

13 Due to improved data quality, these figures abroad for 2021 and 2022 deviate in part from previously published data.

Waste	Germany					Abroad				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Total non-hazardous waste in t	1,009	694	781	807	807					
Total non-hazardous waste per staff member in kg	184	115	130	129	124					
Total residual waste in t	303	169	205	187	182					
Total residual waste per staff member in kg	55	28	34	30	28					Data not mapped in the CSH
Total paper waste in t	283	188	211	215	209					
Total paper waste per staff member in kg	51	31	35	34	32					
Total hazardous waste in t	5	15	12	14	13					

Biodiversity	Germany					Abroad				
	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
Usable space in m ²	157,352	159,870	162,240	161,589	155,333					
Usable space per staff member in m ²	29	27	27	26	24					
Sealed outer surface in m ²		35,610	38,076	38,076	42,455					Data not mapped in the CSH
Grünflächen (nicht versiegelt) in m ²	Data not yet mapped	51,486	48,379	48,379	48,284					
Near-natural, biodiversity-friendly areas in m ²		28,908	31,292	31,322	31,184					

Notes on calculation methods

For Germany, data on the amount of energy, water and paper we use and the waste we produce is compiled and submitted to the Sustainability Office by the participating organisational units at our six EMAS sites in Bonn, Eschborn, Berlin (two locations), Bonn-Röttgen and Feldafing. All consumption figures are reviewed and verified for plausibility. The corresponding figures for smaller non-EMAS locations are extrapolated from this compiled data. Also, we calculate an approximate figure to indicate the resources consumed by a single, statistically average employee. This figure is then multiplied by the number of employees at our smaller locations to represent consumption levels at sites without EMAS validation. Outside Germany, consumption data for energy, water and paper are compiled and totalled using the CSH. There have been consistent improvements in data availability and quality in recent years. The CSH data is also verified for plausibility; any discrepancies are clarified. Within the scope of the query zero values that indicate zero consumption are distinguished from zero values which indicate missing data. If specific data of a country is missing, it will be extrapolated using the country average. In the case of missing data about an environmental aspect it will be compiled using the related division average. Thereby, the data basis will be completed.

The climate and environmental figures per employee shown in the report are based on the number of full-time equivalent (FTE) posts for the corresponding years. These notes on our calculation methods apply to the current reporting year. The figures for Germany are the totals as at 31 May 2024. Due to better availability of data, some figures have been updated for 2021 and 2022. There were major adjustments in the calculation for 2022. The reason was that the data from 2023 opened up new possibilities for plausibility checks, as the effects of the Corona pandemic distorted the data to a lesser extent. In addition, errors in the Excel system were corrected and the process improved.

Both EMAS and the CSH provide consumption data for calculating GIZ's greenhouse gas (GHG) emissions. In doing so, we are guided by the international standard known as the Greenhouse Gas Protocol (GHGP). The GHGP distinguishes between direct and indirect emissions within three scopes:

- **Scope 1:** Direct sources of GHG emissions that are owned or controlled by the company, such as fuel for cars or generators and heating energy from combustion processes;
- **Scope 2:** Indirect emissions from purchased energy such as electricity or district heating / cooling;
- **Scope 3:** Other indirect emissions generated along the upstream and downstream value chain that are therefore also within the responsibility of the company (e.g. goods and services purchased, business flights and commuting).

Changes to the assessment system were made as of 2021 so that GHG emissions could be calculated in accordance with the requirements of the Science Based Targets initiative (SBTi). Wherever possible, these changes were also made retroactively to ensure data comparability. We do not have raw data for all emissions categories. In light of this, we have to estimate some emissions in our upstream and downstream value chain. For this reason, we performed a Scope 3 screening to obtain a complete picture with the SBTi in mind and to make our progress towards objectives transparent. One considerable challenge lies in the lack of primary data in the value chain, especially for procurement. An activity-based accounting method is currently being developed for the procurement of services. Emissions from the procurement of material goods and capital goods, on the other hand, are not part of the reduction targets. Only estimates based on the expenditure-based method are available here. This means that they cannot be controlled directly.

The emission factors for **heating energy** from combustion processes, such as biomethane and natural gas, and **fuels for cars and generators** are taken from the Global Emission Model for Integrated Systems (GEMIS) 5.0 and from the UK Department for Environment, Food and Rural Affairs (DEFRA) (2022), and refer to emission factors without the upstream chain. In Germany, we also use utility-specific emission factors.

The global warming potential (GWP) from **coolants** is determined using conversion factors specified by the Intergovernmental Panel on Climate Change (IPCC) IV. In Germany, this calculation is based on actual reported amounts of coolant refilled during maintenance work. Since 2019, we have also compiled data on coolant emissions from our operations outside Germany. These figures are based on whole life-cycle emissions.

The emission factors for **electricity** in Germany are published by the German Environment Agency (2023) and refer to emission factors without the upstream chain. Outside Germany, GHG emissions from electricity consumption are calculated on the basis of country-specific emission factors set by the International Energy Agency (IEA 2023).

The emission factors for **district heating and cooling** are based on specific data provided by each energy supplier. Where this information is not available, emission factors from DEFRA (2021/22) are used.

GHG emissions from **purchased goods and services** are estimated with the help of the Scope 3 Evaluator from the Greenhouse Gas Protocol and Quantis based on WIOD (2015) emission factors.

The emission factors for **fuel and energy-related emissions** (excluding the upstream value chain) are taken from the respective source for each energy type, for instance the German Environment Agency for electricity and GEMIS 5.0 or DEFRA 2022 and 2023 for natural gas. Where emission sources are not differentiated, figures from DEFRA 2022 were used.

GHG emissions from **business flights** are calculated using the German Business Travel Association (VDR) standard. We then apply a radiative forcing index (RFI) factor of 2.7 to reflect the additional greenhouse effect of high-altitude emissions. All business flights booked via our German travel agency are reported by it to an external service provider once a year. Outside Germany, the local travel agencies under contract with GIZ pass raw data for all flight bookings to an external service provider. These service providers then calculate the data for specific employee groups and, outside of Germany, for every country office. Emissions for rail travel in Germany are calculated using the data specifically provided for GIZ by Deutsche Bahn.

GHG emissions from **commuting** in Germany were compiled using the results of a mobility survey and calculated using emission factors from the German Environment Agency. Due to new findings and updating of emission factors, the data from 2022 onwards are only comparable with previous years to a limited extent. For operations outside Germany, a mobility survey was also piloted in 2021, initially involving approximately 550 employees from 11 GIZ partner countries in different parts of the world. Per capita GHG emissions were then extrapolated.

In addition to GHG emissions, the tables summarising our climate and environmental data also take into account **other air pollutants** such as nitrogen oxides (NO_x), sulphur dioxide (SO₂) and particulate matter (PM10) in Germany. The total figures for these additionally recorded air pollutants come from building-related emissions (e.g. from electricity and district heating/cooling), company cars and commuting. Emission factors are taken from the GEMIS 5.0 database.

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