

Climate and environmental data 2022



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 2022' 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 2022. The figures for Germany are the totals as at 31 May 2023. Previous publications may show other data.

Summary of climate and environmental data

Workforce

	Germany				Abroad			
	2019	2020	2021	2022	2019	2020	2021	2022
Total number of internal staff [FTE]	5,183	5,782	5,769	6,036	No distinction between internal and external staff is made.			
Total number of external staff [FTE]	315	234	245	240				
Total number of internal and external staff [FTE]	5,497	6,016	6,014	6,276	18,228	18,962	19,945	20,093

Summary of GHG emissions¹

Scope	Germany				Abroad			
	2019	2020	2021	2022	2019	2020	2021	2022
Scope 1								
Heating [in t CO ₂ e]	2,760	2,228	1,125	911	1,850	1,975	1,918	1,233
Fuel for company vehicles in t CO ₂ e	23	13	10	8	11,550	8,236	9,248	10,741
Coolants in t CO ₂ e	31	23	8	32	4,048	3,849	4,111	4,055
Generators in t CO ₂ e	3	7	6	6	1,765	2,303	1,379	2,641
Scope 2								
Electricity ² in t CO ₂ e	361	289	240	191	9,693	7,582	8,044	8,435
District heating in t CO ₂ e	177	171	211	171	351	563	423	218
District cooling in t CO ₂ e	47	36	50	51	76	0,5	0	0

¹ Due to improved data quality, these figures partly deviate from previously published data.

² Emissions from electricity were calculated using the market-based method domestically.

Emissions from sourcing biomethane³

	Germany				Abroad			
	2019	2020	2021	2022	2019	2020	2021	2022
Heating in t CO ₂ e	No supply of biomethane		148	118	No biomethane is purchased for heating abroad			
Fuel and energy-related emissions in t CO ₂ e	No supply of biomethane		53	47				

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

Electricity⁴

	Germany				Abroad			
	2019	2020	2021	2022	2019	2020	2021	2022
Electricity (location-based method) in t CO ₂ e	4,197	4,074	3,777	3,524	9,693	7,582	8,044	8,435
Electricity (market-based method) in t CO ₂ e	361	289	240	191	Data not mapped in the CSH			

⁴ 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	2019	2020	2021	2022
Purchased goods and services ⁵ in t CO ₂ e	132,223	136,910	155,341	139,122	61,789	54,815	84,035	68,151
Fuel and energy-related emissions ⁶ in t CO ₂ e	312	289	217	184	8,276	6,322	5,652	6,898
Business trips in in t CO ₂ e	23,275	3,179	2,798	13,239	86,254	19,481	22,724	59,531
Commuting ⁷ in t CO ₂ e	3,042	1,587	1,078	4,903	10,008	4,396	4,624	13,974
Events in t CO ₂ e	Data not mapped		36	81	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 target⁸

	Entire company			
	2019	2020	2021	2022
Scope 1 + 2 in t CO ₂ e	32,709	27,274	26,777	28,693
Scope 3 in t CO ₂ e	325,157	226,979	276,457	306,003

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

Other Airborne Emissions⁹

	Germany				Abroad			
	2019	2020	2021	2022	2019	2020	2021	2022
NO _x (nitrogen oxides) in kg	8,822	4,394	3,148	13,115	Data not mapped in the CSH			
SO ₂ (sulfur dioxide) in kg	4,964	2,036	1,551	4,880				
PM 10 (coarse particulate matter) in kg	233	82	76	563				

⁹ Data for 2020 and 2021 have been recalculated based on new data.

Offsets

	Germany				Abroad			
	2019	2020	2021	2022	2019	2020	2021	2022
Climate neutralized t CO ₂ e	31,690	9,510	7,744	21,743	0	43,706	54,141	93,133

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

Energy consumption¹⁰

	Germany				Abroad			
	2019	2020	2021	2022	2019	2020	2021	2022
Total energy consumption								
Total energy consumption in kWh	24,114,794	23,015,555	23,438,006	20,445,840	80,277,407	66,123,732	66,416,385	76,503,371
Total energy consumption per staff member in kWh	4,387	3,826	3,897	3,258	4,404	3,487	3,330	3807
Electricity								
Total electricity consumption in kWh	10,088,941	9,793,714	9,078,147	8,470,160	19,717,828	15,944,268	16,329,602	17,667,037
Total electricity consumption per staff member in kWh	1,835	1,628	1,509	1,350	1,082	841	819	879
Green electricity percentage	93%	94%	94%	95%	Data not mapped in the CSH			
Heating/Cooling energy								
Total heating/cooling energy in kWh	13,925,530	13,148,410	14,298,317	11,928,666	7,083,143	7,382,315	6,464,927	4,393,487
Total heating/cooling energy per staff member in kWh	2,533	2,186	2,377	1,901	389	389	324	219
Percentage of heating energy from renewable sources	12%	19%	59%	56%	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	46,036,759	33,483,739	37,654,530	43,728,348
Total energy consumption from motor vehicle fuel per staff member in kWh	18	8	9	6	2,526	1,766	1,888	2,176
Total energy consumption by generators in kWh	5,498	24,343	10,705	10,705 ¹¹	7,439,677	9,313,409	5,967,327	10,714,498
Total energy consumption by generators per staff member in kWh	1	4	2	2	408	491	299	533

¹⁰ Due to improved data quality, these figures differ in part from previously published data.

¹¹ This is an estimate based on missing data.

Water consumption

	Germany				Abroad			
	2019	2020	2021	2022	2019	2020	2021	2022
Total drinking water consumption in m ³	50,678	33,535	30,465	29,978	608,612	490,075	412,520	486,575
Total drinking water consumption per staff member in l	9,219	5,574	5,065	4,777	33,390	25,845	20,682	24,216

Paper Consumption

	Germany				Abroad			
	2019	2020	2021	2022	2019	2020	2021	2022
Paper consumption (sheets)	11,897,087	6,225,693	5,140,153	4,738,544	73,673,934	43,849,811	49,141,857	52,288,687
Per-capita paper consumption (sheets per staff member)	2,164	1,035	855	755	4,042	2,313	2,464	2,602
Percentage of recycled paper used	95%	100%	100%	100%	15%	16%	13%	22%

Waste

	Germany				Abroad			
	2019	2020	2021	2022	2019	2020	2021	2022
Total non-hazardous waste in t	1.009	694	781	807	Data not mapped in the CSH			
Total non-hazardous waste per staff member in kg	184	115	130	129				
Total residual waste in t	303	169	205	187				
Total residual waste per staff member in kg	55	28	34	30				
Total paper waste in t	283	188	211	215				
Total paper waste per staff member in kg	51	31	35	34				
Total hazardous waste in t	5	15	12	14				

Biodiversity

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

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. An external service provider supports GIZ in analysing data and calculating indicators. 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 of 31 May 2023. Due to better availability of data, some figures have been updated for 2020 and 2021. There were major adjustments in the calculation for 2021. The reason was that the data from 2022 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. One significant change is the expansion of the assessment process to include upstream energy-related emissions (e.g. emissions from energy generation and transportation). In contrast with the previous year, these emissions were removed from Scopes 1 and 2. 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. We use the Scope 3 Evaluator from Greenhouse Gas Protocol and Quantis for this purpose, which means that we can only provide estimated values based on financial volumes in some places. These estimates are imprecise because the procured product categories and services have to be aggregated to a large degree to align them with the underlying emission factors in the World Input-Output Database (WIOD).

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.

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 (2022) 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 2022).

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 (2022) 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 2021 for natural gas. Where emission sources are not differentiated, figures from DEFRA 2021 and 2022 were used. This additional aspect was added with effect from 2021 for both Germany and the partner countries.

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), sulfur 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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