

Climate and Environmental Data

2021

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 2021' 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 2021. The figures for Germany are the totals as at 31 May 2022. Previous publications may show other data.

SUMMARY OF CLIMATE AND ENVIRONMENTAL DATA

WORKFORCE

	Germany			Abroad		
	2019	2020	2021	2019	2020	2021
Total number of internal staff (FTE)	5,183	5,782	5,769	No distinction between internal and external staff is made.		
Total number of external staff (FTE)	315	234	245			
Total number of internal and external staff (FTE)	5,497	6,016	6,014	18,228	18,962	19,945

SUMMARY OF GHG EMISSIONS¹

	Germany			Abroad		
	2019	2020 ²	2021	2019	2020 ²	2021
Scope 1						
Heating (in t CO ₂ e)	2,760	2,121	1,019 ³	1,850	2,383	2,957
Fuel for company vehicles in t CO ₂ e	23	13	10	11,550	8,236	9,258
Coolants in t CO ₂ e	31	23	8	4,048	3,876	4,160
Generators in t CO ₂ e	3	7	6	1,765	2,256	1,574
Scope 2						
Electricity in t CO ₂ e	361	290	242 ⁴	9,693	6,904	8,446 ⁴
District heating in t CO ₂ e	177	171	172	351	574	415
District cooling in t CO ₂ e	47	37	51	76	0	0

	Germany			Abroad		
	2019	2020 ⁵	2021	2019	2020 ⁵	2021
Scope 3						
Purchased goods and services ⁶ in t CO ₂ e	132,223	136,910	155,341	61,789	54,815	84,035
Fuel and energy-related emissions ⁷ in t CO ₂ e	313	281	205	8,276	6,322	6,020
Business trips in t CO ₂ e	23,275	3,179	2,798	86,254	19,481	23,163
Commuting ⁸ in t CO ₂ e	3,042	1,587	1,078	10,008	4,396	4,624
Events in t CO ₂ e	Not recorded	Not recorded	36	Data not mapped in the CSH.		

EMISSIONS FROM SOURCING BIOMETHANE⁹

	Germany		
	2019	2020	2021
Heating (in t CO ₂ e)	Not recorded	Not recorded	147
Fuel and energy-related emissions (in t CO ₂ e)	Not recorded	Not recorded	53

¹ Since we cannot reduce all GHG emissions from different types of sources, we offset emissions directly connected to our operations. We have offset our Scope 1 and 2 emissions for operations in Germany since 2013 and our international emissions since 2020. GIZ has also offset Scope 3 emissions from business travel and commuting in Germany since 2013. In 2020, we started offsetting emissions from business travel outside Germany, too. Moreover, we added emissions from events in Germany and other energy-related emissions in Germany and abroad in 2021. Other emission sources are outside GIZ's control and can be mapped only in part using rough estimates. They are not offset.

² These figures deviate in part from previously published data due to improvements in data quality and adjusted calculation methods. Fuel-related and energy-related emissions were reported separately in Scope 3.

³ GIZ has sourced biomethane for heating most locations in Germany since 2021. Some 147.32 t of the 1,019 t CO₂e can be attributed to direct emissions from biomethane.

⁴ Emissions from electricity were calculated in Germany using the market-based method. Abroad we use the location-based method.

⁵ These figures deviate in part from previously published data due to improvements in data quality and adjusted calculation methods. Fuel-related and energy-related emissions were reported separately in Scope 3.

⁶ Estimate based on financial data. These emissions are solely from purchased services because these are material for GIZ. They do not include construction services.

⁷ Fuel-related and energy-related Scope 3 emissions from Germany were recalculated for 2019 to 2021 based on raw data for Scope 1 and 2.

An estimate was made for international operations for 2019 and 2020. These emissions have been calculated just as accurately since 2021.

⁸ Commuter travel outside Germany was roughly estimated for 2019 using flat-rate values. Starting in 2020, these figures are calculated using an extrapolation based on the results of an internal survey of selected sites outside Germany.

⁹ Most locations in Germany have sourced biomethane for heating since 2021.

ELECTRICITY

	Germany			Abroad		
	2019	2020	2021	2019	2020	2021
Electricity (location-based method) in t CO ₂ e	4,197	4,074	3,797	9,693	6,904	8,446
Electricity (market-based method) in t CO ₂ e	361	290	242	Data not mapped in the CSH. ¹⁰		

ACHIEVEMENT OF SBTi TARGET

	Entire company		
	2019 ¹¹	2020 ¹¹	2021
Scope 1 + 2 in t CO ₂ e	32,737	26,892	28,318
Scope 3 in t CO ₂ e	325,180	226,970	277,264

OTHER AIRBORNE EMISSIONS

	Germany ¹²			Abroad		
	2019	2020	2021	2019	2020	2021
NO _x (nitrogen oxides) in kg	8,822	4,369	3,123	Data not mapped in the CSH.		
SO ₂ (sulfur dioxide) in kg	4,964	2,036	1,543			
PM10 (coarse particulate matter) in kg	233	81	82			

MOBILITY

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

¹⁰ We solely use the location-based method outside Germany. No data is available for calculating the market-based method.

¹¹ The totals deviate in part from previously communicated figures because data quality has improved thanks to more accurate recalculations.

¹² Data was recalculated based on new data and deviates from previous data.

ENERGY CONSUMPTION

	Germany ¹³			Abroad		
	2019	2020	2021	2019	2020	2021
Total energy consumption						
Total energy consumption in kWh	24,114,794	22,286,638	22,804,765	80,277,407	66,717,089	71,652,144
Total energy consumption per staff member in kWh	4,387	3,692	3,792	4,404	3,518	3,592
Electricity						
Total electricity consumption in kWh	10,088,941	9,793,714	9,126,536	19,717,828	15,778,096	17,424,935
Total electricity consumption per staff member in kWh	1,835	1,628	1,517	1,082	832	874
Green electricity percentage	93 %	94 %	94 %	Data not mapped in the CSH.		
Heating / Cooling energy						
Total heating / cooling energy in kWh	13,925,530	12,419,494	13,616,686	7,083,143	8,430,613	9,918,427
Total heating / cooling energy per staff member in kWh	2,533	2,064	2,264	389	445	497
Percentage of heating energy from renewable sources	12 %	20 %	61 %	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	46,036,759	33,489,005	37,674,317
Total energy consumption from motor vehicle fuel per staff member in kWh	18	8	9	2,526	1,766	1,889
Total energy consumption by generators in kWh	5,498	24,343	10,705	7,439,677	9,019,375	6,634,465
Total energy consumption by generators per staff member in kWh	1	4	2	408	476	333

WATER

	Germany			Abroad		
	2019	2020	2021	2019	2020	2021
Total drinking water consumption in m ³	50,678	33,535	31,261	608,612	476,944	381,503
Total drinking water consumption per staff member in l	9,219	5,574	5,198	33,390	25,153	19,127

PAPER CONSUMPTION

	Germany			Abroad		
	2019	2020 ¹⁴	2021	2019	2020	2021
Paper consumption (sheets)	11,897,087	6,225,693	5,140,153	63,796,381	37,054,564	40,661,395
Per-capita paper consumption (sheets per staff member)	2,164	1,035	855	3,500	1,954	2,039
Percentage of recycled paper used	95 %	100 %	100 %	15 %	20 %	22 %

¹³ Data for 2019 has been recalculated and differs from previous data because statements of utility costs were received after the previous summary was completed.

¹⁴ Data has been corrected. This data deviates from previously published data.

WASTE

	Germany			Abroad		
	2019	2020	2021	2019	2020	2021
Total non-hazardous waste in t	1,009	694	754			
Total non-hazardous waste per staff member in kg	184	115	125			
Total residual waste in t	303	169	163			
Total residual waste per staff member in kg	55	28	27	Data not mapped in the CSH.		
Total paper waste in t	283	188	193			
Total paper waste per staff member in kg	51	31	32			
Total hazardous waste in t	5	15	10			

BIODIVERSITY

	Germany			Abroad		
	2019	2020	2021	2019	2020	2021
Usable space in m ²	157,352	161,917	162,240			
Usable space per staff member per staff member in m ²	29	27	27			
Sealed outer surface in m ²		35,610	38,076	Data not mapped in the CSH.		
Green areas (not sealed) in m ² ¹⁵	Data not yet mapped	51,486	48,249			
Near-natural, biodiversity-friendly areas in m ²		28,908	31,292			

¹⁵ The composition of the indicators has changed and was adjusted retroactively for 2020. A distinction is now made between sealed land and green spaces. Green spaces include green areas (like lawns) and near-natural spaces that are biodiversity-friendly (e.g. wildflower meadows).

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. Drawing on historical data, 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.

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 2022. Due to better availability of data, some figures have been updated for 2019 and 2020.

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) (2021), 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 (2021) 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 2021).

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) 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 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. Within Germany these service providers calculate the data for specific groups of employees; outside of Germany the data are provided for the respective country offices. 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. For operations outside Germany, a mobility survey was also piloted, 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 the climate impact of **other air pollutants** such as nitrogen oxides (NOX), 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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