Corporate Carbon Footprint 2021

gabocom .planetly

Gabocom - Corporate Carbon Footprint - Documentation

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List of abbreviations

CH_4	Methane
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DEFRA	Department for Environment, Food and Rural Affairs
EEA	European Environment Agency
EEIO	Environmentally extended input-output
GHG	Greenhouse Gas
GLEC	Global Logistics Emissions Council
GWP	Global Warming Potential
HBEFA	Handbook Emission Factors for Road Transport
HFCs	Hydrofluorocarbons
IEA	International Energy Agency
IPCC	Intergovernmental Panel on Climate Change
N_2O	Nitrous Oxide
NF_3	Nitrogen trifluoride
PFCs	Perfluorocarbons
SF_6	Sulfur hexafluoride
UBA	German Environment Agency (Umweltbundesamt)

Executive Summary

In this project, .planetly by OneTrust carried out a corporate carbon footprint analysis of Gabocom's emissions in 2021. According to the GHG Protocol Corporate Standard (2004) and GHG Protocol Value Chain Standard (2011), the footprint analysis covers all of Gabocom's internal activities for scope 1, 2 & 3. Additionally, a Supply Chain Carbon Footprint was conducted, which is also part of this report.

For 2021 **Gabocom's gross footprint amounts to 72,228.00 tonnes of carbon dioxide equivalent (tCO_2e)** (location-based approach). Due to the use of renewable electricity, 606.46 tCO_2e can be deducted (market-based approach). **In conclusion, Gabocom's net emissions amount to 71,621.54 tCO_2e in 2021.**

The results of this analysis will be used to provide Gabocom with transparency on its emissions, to enable the setup and implementation of specific carbon reduction measures, as well as the foundation to track its progress in reducing carbon emissions/the effectiveness of their reduction measures. It is planned to start **periodic reporting**.

The overall data quality is considered good and comprehensive, with common and statistically insignificant data quality issues. For more information, please refer to the chapter "Quality of Activity Data".

About Gabocom

Gabocom is the leading provider of holistic microduct and cable management systems for the telecommunications industry. The name Gabocom already describes the historical development of our enterprise with one word: Out of the plastics processing plant **G** ebrüder **A** nger GmbH & Co. – founded in 1956 in **Bo** gen, Germany, as manufacturer of drainage pipes – in 1970 emerged an independent division. This specialized in the demands of Tele **com** and started with laying ducts.

Today, Gabocom is located in the German town Niederwinkling and is known as the leading partner of telecommunication enterprises and network operators in Germany as well as all over Europe. With the speed•pipe® system, the company established completely new possibilities for blowing in fibre optic cables and set standards which are valid all over the world. Several hundred thousand kilometres have already been installed successfully since 2002 – and they become more every day. For more information, visit www.gabocom.de.

Results Overview

Overall result	2021	2020
Scope 1	458.86 tCO_2e	373.10 tCO_2e
Scope 2	3,270.92 tCO_2e	1,994.40 tCO_2e
Scope 3	67,891.75 tCO_2e	40,798.40 tCO_2e
Total	**71,621.54 tCO_2e**	**43,165.90 tCO_2e**

What does the result mean?
The annual corporate carbon footprint is equivalent to…

... the annual carbon footprint of **14,949** people (world average).
[MUNTEAN2018]

… travelling **496,363,968** km with a plane in economy class.
[DEFRA2020]

… producing **196,712,425** kWh in a coal power plant.
[DEFRA2020]

… drinking **1,456,296,429** cups of coffee.
[REINHARD2020]

Intensity Ratio

In order to capture the link between environmental and financial performance, emissions intensity ratios are calculated. This ratio is the reported carbon footprint divided by an appropriate financial metric, in this case the revenue in euros.

	2021	**2020**
Revenue	104.83 m€	79.51 m€
Emissions	71,621.54 tCO_2e	43,165.9 tCO_2e
Intensity Ratio	**683.23 gCO_2e/€**	**542.88 gCO_2e/€**

Boundaries and scope

This report contains all information and results for Gabocom's corporate carbon footprint analysis in 2021, using all available data from that year. A forecasting was conducted for the home office and commute activities, based on an extrapolation of 2020 data for 2021. Gabocom mentioned the activities have the same behaviour as last year and due to internal limitation it is better to extrapolate.

The headquarters in Niederwinkling, Germany, is in scope of this analysis. Additionally, employees that are working remotely in France were considered in the analysis. All relevant scope 1 & 2 activities and scope 3 categories have been considered. The operational boundaries were set to include: air-conditioning, business travel (flights, car rides, hotel stays and train rides), electricity, fleet, heating, employee commuting, online-interaction, office supplies, furniture, IT equipment, post, procured goods, professional services, software usage. In addition, the production (cradle-to-gate), and logistics (supplier-to-gate / inbound and gate-to-customer / outbound) emissions were also in the scope of the analysis.
The End-of-Life scenario of the materials analysed was not included in the operational boundary. In the following carbon footprint analysis, it should be considered to include this activity because they are relevant to gain a full overview of Gabocom's carbon footprint.

Biological CO_2 sequestration is not relevant for Gabocom's operation. Biological emissions have been included in a few categories (e.g. 7% share of biogenic diesel in vehicle fuel consumption), but a differentiation is not useful in this report, as these factors are not influenced by Gabocom, but are a legislative standard.

Base year and recalculation policy

2020 was selected as the base year due to data availability and the market performance of the selected year. A recalculation may be considered if there is significant methodological progress or an improved availability of emission factors.

Quality of Activity Data

Overall data quality was considered sufficient to calculate meaningful results. It is within Gabocom's responsibility to ensure data completeness. Planetly by OneTrust is not in the position to anticipate missing processes in the defined scope.

The most important activities, **production materials, capital goods** and **electricity** have been collected in this project and can be considered accurate.

The End-of-Life emissions were excluded in this analysis, at the request of the client. It is recommended to include them in future carbon footprint analyses to have a better overview of the customer's emissions. In addition, the home office and commute emissions were extrapolated based on last year's activity data to the FTE number for 2021.

It has to be noted that emissions were not collected from suppliers. Due to the high uncertainty of spend-based calculations, the accuracy for purchased services can be improved greatly with supplier engagement.

Scope 1 & 2 Footprint*

		CO_2e	CO_2**	CH_4**	N_2O**	
Scope 1	Fleet	239.4	6.80	<0.01	0.04	tonnes
	Cooling	2.09	*Not available*			tonnes
	Heating	217.38	216.76	0.33	0.29	tonnes
Scope 2	Heating	*Not relevant*				tonnes
Scope 2 (Location Based)	Office Electricity	3,877.38	3,856.43	3.49	17.46	tonnes
Scope 2 (Market Based)	Office Electricity	3,270.92	*Not available*			tonnes
Scope 1 + 2 (Location Based)	Total***	4,336.24	4,079.99	3.83	17.79	tonnes
Scope 1 + 2 (Market Based)	**Total*** **	**3,729.78**	**223.57**	**0.34**	**0.33**	**tonnes**

**GHGs that were not reported separately (HFCs, PFCs, SF6,NF3) are included in the inventory but due to missing information cannot be disclosed.*
***GHGs are expressed in metric tonnes of CO_2-equivalent*
****Deviations are due to rounding*

Scope 1 Emissions

The company uses diesel, liquified petroleum gas (LPG) fuel for its vehicles and plug-in-hybrid cars are part of the fleet.
The fuel consumption has been measured when possible, while in some cases the fuel consumption has been determined with a spend-based estimation model [PLANETLY2020-12]. Emission factors from [GLEC2019] have been used.
For the plug-in hybrids, emission factors from [HBEFA2018] have been used. Since the used emission factor includes both the fuel and electricity consumption in one aggregated factor, all the related emissions are to be accounted for under scope 1, even though the electricity consumed would be part of scope 2 emissions.

The office in Niederwinkling is heated with gas. The consumption has been measured, and emission factors have been used from [UBA2019].

Fugitive emissions from air-conditioning are relevant for Gabocom's footprint. For the office in Niederwinkling, the refilled amount of the reporting year was available.

Scope 2 Emissions

Electricity consumption has been taken from electricity bills for all locations. For the location-based approach, emission factors have been used from [IEA2021]. Whereas, for the market-based approach, supplier- and tariff-specific emission factors have been available and applied accordingly.

Scope 3 Footprint

Category	Activity	tCO_2e
01 Purchased Goods & Services	Consumables	43.56
01 Purchased Goods & Services	Cooling-Liquid	0.37
01 Purchased Goods & Services	External Services	324.24
01 Purchased Goods & Services	Production Material	63,231.62
01 Purchased Goods & Services	Water	0.88
01 Purchased Goods & Services	**Total***	**63,600.67**
02 Capital Goods	Equipment	1,877.90
02 Capital Goods	**Total***	**1,877.90**
03 Fuel- & Energy related Activities	Electricity T&D losses	179.26
03 Fuel- & Energy related Activities	Fuel Production	45.35
03 Fuel- & Energy related Activities	Heating Gas Production	50.65
03 Fuel- & Energy related Activities	**Total***	**275.26**
04 Upstream Transport & Distribution	Inbound Transportation	256.63
04 Upstream Transport & Distribution	Outbound	1,481.12
04 Upstream Transport & Distribution	Postage	0.62

04 Upstream Transport & Distribution	**Total***	**1,738.37**
05 Waste generated in Operations	Waste	11.76
05 Waste generated in Operations	Water Treatment	1.81
05 Waste generated in Operations	**Total***	**13.58**
06 Business Travel	Business Travel Flight	9.30
06 Business Travel	Business Travel Hotels	2.47
06 Business Travel	Business Travel Street	0.37
06 Business Travel	Business Travel Rail	0.04
06 Business Travel	**Total***	**12.19**
07 Employee Commuting	Commute	321.56
07 Employee Commuting	Tele-Working	18.81
07 Employee Commuting	**Total***	**340.37**
08 Upstream leased Assets	Leased vehicles	33.38
08 Upstream leased Assets	**Total**	**33.38**
09 Downstream Transport & Distribution	Not relevant	
09 Downstream Transport & Distribution	**Total***	**0.00**
10 Processing of sold Products	Not relevant	
10 Processing of sold Products	**Total***	**0.00**
11 Use of sold Products	Online Interaction	0.06
11 Use of sold Products	**Total***	**0.06**
12 End-of-life Treatment of sold Products	Not relevant	
12 End-of-life Treatment of sold Products	**Total***	**0.00**
13 Downstream leased Assets	Not relevant	

13 Downstream leased Assets	**Total**	**0.00**
14 Franchises	Not relevant	
14 Franchises	**Total***	**0.00**
15 Investments	Not relevant	
15 Investments	**Total***	**0.00**
Scope 3	**Total***	**67,891.75**

**Deviations are due to rounding*

Category 1 - Purchased Goods and Services

Consumables

Consumables are all items needed for operations that are not depreciated. These are commodities, food/beverages, print materials, etc. Data for the purchases in 2021 has been collected for the relevant offices; this data has then been assessed with spend-based emission factors from [EXIOBASE2018], which contain environmentally extended input-output (EEIO) emission factors for most countries until 2011.

External Servers

The energy consumption and infrastructure of cloud-based and external servers is a relevant factor in overall worldwide emissions. A spend-based model to calculate these emissions based on different publicly available information like data center efficiency and electricity emission factors, has been developed by Planetly by OneTrust. This model has a moderate degree of uncertainty because most data centers do not disclose detailed information on their emission performance. The calculation is based on total server expenses and [PLANETLY2022-2].

External Service Providers

Several external service providers have been contracted. The expenses for these service providers have been assessed with spend-based emission factors from [EXIOBASE2018]. These factors are based on macroeconomic models and include complete activities of service providers (including their business travel, electricity consumption at customers' offices, office emissions, etc.). This method is recommended by the European Environment Agency (EAA).

Expenses for external services have been collected. The largest share of these issues is attributable to **the repair of equipment, marketing and operations.**

Operations is considered part of **other business activities,** which includes spending related to all other business activities not captured in the existing categories. Examples: legal services; call centers, translation and interpretation, photographic activities, architectural activities, etc.

The accuracy of the calculation can be increased enormously with more primary data if, in the future, subcontractors have to provide information on their own carbon footprint and that of their products. A stricter sustainability policy on the selection of subcontractors can also lead to a reduction in the resulting emissions.

Production materials

All purchased goods during the reporting year have been collected with a Planetly template. Hereby, all purchased goods including raw materials, components, and packaging (wooden drums, cardboard, plastic packaging) have been taken into account. A model for assessing the cradle-to-gate emissions for the materials used in the production process was used. To assess the environmental impact of the production materials, quantities per material type were connected with the emission factor database from [ECOINVENT2021].

Water

Actual water consumption has been measured for all relevant locations. For the calculation of the effects of the water supply and treatment [DEFRA2019] has been used.

Cooling Liquid

We also include the production emissions of the used cooling liquid for the office air-conditioning. The amount of refilled cooling liquid was given, and the emissions were calculated with [CASCINI2013].

Category 2 - Capital Goods

Equipment

Equipment includes goods that are needed for the company to conduct its operations: in this case, IT-equipment and Furniture are accounted for under this activity.
All capital goods purchased in 2021 for the offices have been collected and assessed with [EXIOBASE2018].

Category 3 - Fuel & Energy related Activities

Electricity transmission & losses and fuels

Upstream emissions for transmission & distribution losses of electricity have been calculated based on the most up-to-date emission factors from the International Energy Agency [IEA 2020]. The emission factors from [IEA2020] do not account for upstream emissions resulting

from the resources used for the generation of electricity. These emissions will be added in an updated model that can be used in following reports
Fuel production has been calculated with [GLEC2019] in case of diesel and LPG and [HBEFA2018] for the hybrid plug-in cars. For heating gas production [UBA2019] has been used.

Category 4 - Upstream Transport & Distribution

Inbound Transportation

Inbound transportation over land has been calculated based on actual shipment information. This includes the address of the supplier and the address of the warehouse. In addition to transport emissions, the transshipment emissions in port / warehouse operations have been considered. Street distances have been calculated with *Here Maps*. Appropriate emission factors from [GLEC2019] have been used in consideration of mode and location.

Outbound Transportation

Outbound transportation includes the transport from warehouses to end-customers. This includes street, train, and ferry modes of transports. The transportations include a transshipment operation in a known location, therefore both distances (warehouse to transshipment location and transhipment location to end-customer) have been considered. For the last-mile transport between the final transhipment and the end-customer a smaller distribution van and a detour surcharge to account for milk-run operations have been considered. All distances have been calculated with *Here Maps*, and emission factors have been used from [GLEC2019].

Postage

The number of letters (0) and parcels (1274) was given by Gabocom for both national and international deliveries. The emission factors from [IPC2019] are used to assess the impact.

Category 5 - Waste Generated in Operations

Offices

Information about the actual amount of waste was available for all locations. The emissions were then calculated with emission factors from [DEFRA2019]. For organic waste, metal, plastics, and residual waste emission factors from [ECOINVENT2021] were used.

Waste Water

Waste water is based on the actual water consumption (see purchased goods and services). Emissions factors are taken from [DEFRA2019].

Category 6 - Business Travel

Flights, Hotels, Rental Cars & Trains

In the calculation of a corporate carbon footprint, it is important to account for Gabocom's business travel, especially because the mode of transport used can be a key driver in the production of carbon emissions. Activities include flights, the rental of cars, hotel stays and train rides.

For flights, distances have been calculated using the great circle distance between the given airports, and then adding 95 km in accordance to [DIN2013]. Emission factors from [BEIS2021] depending on the distance travelled as well as the booking class were used to calculate the resulting emissions.

To calculate the average distances travelled by train, Gabocom provided us with the number of train rides for 2021, divided into the booking class and into the 3 categories; short-, medium- and long-distance. The category “short” includes rides under 100 km, “medium” 100-300 km, and “long” includes rides with a travelled distance of more than 300 km. Emission factors from [UBA2020] depending on the booking class were used to calculate the resulting emissions.

For rental cars, the price for the rental period was given and the distance driven and fuel consumption have consequently been determined with [KORDS2019]. Emissions have been determined based on [DIN2013].

For hotels, the number of nights per country was provided and emission factors per hotel night from [CORNELL2020] were used.

Category 7 - Employee Commuting and Home office

Commuting & Home-Office

Data for commuting and home office has been extrapolated based on the survey conducted last year (2020). In 2020 the number of FTE was 260, and it was answered by 145 employees (142 in Germany and 3 in France, respectively 58% and 100% response rate). This distribution was used for the extrapolation to the new FTE number for 2021 that was 294. In the survey, the employees are asked for the number of workdays, teleworking hours, and kilometres travelled each day per mode. With this information, the total kilometres commuted per year and mode, and total hours spent in teleworking are calculated. Commute emissions have then been calculated with [UBA2020].

For teleworking, the [PLANETLY2020-11] model is used to assess the impact of one hour of remote working. In the model, the energy consumption is based on the average electricity consumption needed for the use of a laptop, lighting and cooling- and gas consumption for the heating of the house.

Category 8 - Upstream Leased Assets

This category includes emissions from the operation of assets that are leased by the reporting company in the reporting year and not already included in the reporting company's scope 1 or scope 2 inventories. This category is relevant for Gabocom to cover their expenses on leased vehicles. The emissions were calculated using the spendings and [EXIOBASE2018].

Category 9 - Downstream Transport & Distribution

This category includes emissions that occur in the reporting year from transportation and distribution of sold products in vehicles and facilities not owned or controlled by the reporting company. All downstream deliveries are done in vehicles controlled by the company, therefore, the category is not relevant for the scope of this report.

Category 10 - Processing of Sold Products

This category includes all emissions from processing of sold intermediate products by third parties. In this case, the company sells finished products, thus, the category was deemed not relevant.

Category 11 - Use of sold Products

Online interaction

An important and unavoidable point for carbon accounting nowadays presents online interactions by clients and other Internet users. By spending time on Gabocom's website (both the German and the French domain are covered within this analysis) viewers use electrical energy with their end devices, which in turn generate emissions. Energy consumption emissions then have been estimated based on average energy consumption of cell phone or laptop chargers and the electricity mix of the respective customers' countries taken from [IEA2019]. The exact consumption data, including the residence country, the number of sessions and the average session length, has been provided by the analytics tool of Gabocom 's and converted into electricity consumed with [PLANETLY2020-14].

Category 12 - End-of-Life Treatment of Sold Products

Consumer waste

This category includes all emissions at the end-of-life of the products which can be recycled, incinerated or landfilled. This category was scoped out of the current analysis at the request of Gabocom.

Category 13 - Downstream Leased Assets

Includes emissions from the operation of assets that are owned by the reporting company and leased to other entities. This category is not relevant for the company, as the company is not a lessor of any assets to third parties.

Category 14 - Franchises

Emissions from the operation of franchises. A franchise is a business operating under a licence to sell or distribute another company's goods or services within a certain location. These emissions are not relevant for the scope of this analysis because the company does not own any franchises.

Category 15 - Investments

These are emissions associated with the reporting company's investments in the reporting year. This category is applicable to both investors and companies that provide financial services, as well as investors that are not profit driven. This category is not relevant for the company because it does not possess any investments for profit or otherwise.

Conclusion & Next Steps

With this second Corporate Carbon Footprint Report, Gabocom gains transparency on its emissions. Scope 1 accounts for 458.86 tCO2e (0.64 %), while scope 2 emissions account for 3,270.92 tCO2e, (4.57 %), the scope 3 emissions have an impact of 67,891.75 tCO2e, (94.79 %). Overall, the main contributor to Gabocom's carbon footprint is the production material allocated to Scope 3 followed by the electricity consumption allocated to scope 2. In addition, these are the main sustainability measures, Gabocom has planned for the upcoming year after their carbon footprint analysis:

- Solar panel installations on top of buildings
- Machinery optimization in terms of energy usage in production sites
- Installation of electric charging stations for electric vehicles for employees.
- Setting reduction targets for energy consumption for the upcoming years.

References

Reference	Author	Year	Title
BEIS2021	Department for Evironment, Food and Rural Affairs	2021	Greenhouse gas reporting: conversion factors 2020 - full set
CORNELL2020	Cornell	2020	Greenview - Cornell Hotel Sustainability Benchmarking Index
DEFRA2019	Department for Environment, Food and Rural Affairs	2019	Greenhouse gas reporting: conversion factors 2019 - full set
DEFRA2020	Defra	2020	Greenhouse gas reporting: conversion factors 2020 - full set
DIN2013	Deutsche Institut für Normung e.V.	2013	DIN EN 16258 - Methode zur Berechnung und Deklaration des Energieverbrauchs und der Treibhausgasemissionen bei Transport-dienstleistungen (Güter- und Personenverkehr)
ECOINVENT2021	Ecoinvent	2021	The ecoinvent database version 3.8: overview and methodology. The International Journal of Life Cycle Assessment
EXIOBASE2018	K. Stadler et al.	2018	EXIOBASE 3: Developing a Time Series of Detailed Environmentally Extended Multi-Regional Input-Output Tables
GLEC2019	GLEC	2019	Global Logistics Emissions Council Framework for Logistics Emissions Accounting and Reporting Version 2.0
HBEFA2018	HBEFA	2018	HBEFA Version 4.1
IEA2019	International Energy Agency	2019	Emission Factors
IEA2020	International Energy Agency	2020	Emission Factors
IEA2021	International Energy Agency	2021	Emission Factors
IPC2019	IPC	2019	Delivery Efficiency
KORDS2019	Kords, Martin	2019	Ranking ausgewählter Reiseländer weltweit nach Höhe der Mietwagenpreise im Jahr 2019
MUNTEAN2018	Muntean et al.	2018	Fossil CO2 emissions of all world countries - 2018 Report, EUR 29433 EN, Publications Office of the European Union
PLANETLY2022-2	Planetly	2022	Modeled spend-based emission factors for different cloud providers

PLANETLY2020-8	Planetly	2022	Modeled aircondition liquid consumption and estimated production emissions
PLANETLY2020-11	Planetly	2020	Modeled Emissionfactor for home office per hour
PLANETLY2020-14	PLANETLY	2020	Modeled online-interaction based on IEA2021
PLANETLY2020-12	PLANETLY	2020	Modelled spent-based Fleet Consumption Factors
REINHARD2020	Reinhard, et al.	2020	Ökologische Fußabdrücke von Lebensmitteln und Gerichten in Deutschland
UBA2019	Umweltbundesamt	2019	Emissionsbilanz erneuerbarer Energieträger
UBA2020	Umweltbundesamt	2020	Vergleich der durchschnittlichen Emissionen einzelner Verkehrsträger im Personenverkehr in Deutschland - Bezugsjahr 2018

About Planetly

Planetly by OneTrust is a technology company on a mission to help build a net-zero economy. Our software helps you to introduce and automate carbon management, from data collection to carbon reduction strategies and offsetting measures.

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