FORLIANCE

GROWING CLIMATE ACTION

CORPORATE CARBON FOOTPRINT 2020

RAMPA GmbH & Co. KG

September 2022

SUMMARY

The subject of this report is the Corporate Carbon Footprint of RAMPA GmbH & Co. KG.

Object of consideration and methodology

The assessment covers the year 2020. The complete GmbH & Co. KG was defined as the object of this assessment. To create a holistic assessment of all emissions, all relevant emissions of scopes 1, 2 and 3 were recorded. Beyond direct emissions, the company's upstream and downstream value chain was, therefore, also considered.

The methodological basis for the analysis performed is the "Greenhouse Gas Protocol Corporate Accounting and Reporting Standard" (GHG Protocol).

Results 2020

The total greenhouse gas emissions caused by RAMPA GmbH & Co. KG in the year 2020 amounts to 1,283.313 t CO_2e (*location-based approach*).

Of this total, 13.92 % can be attributed to emission sources that the company either owns or directly controls (scope 1), 14.33 % to emission sources from purchased electricity (scope 2), and 71.75% to all other emission sources that arise as a result of the company's activities but are under the ownership or control of a third party (scope 3, e.g., business trips, employee commuting).

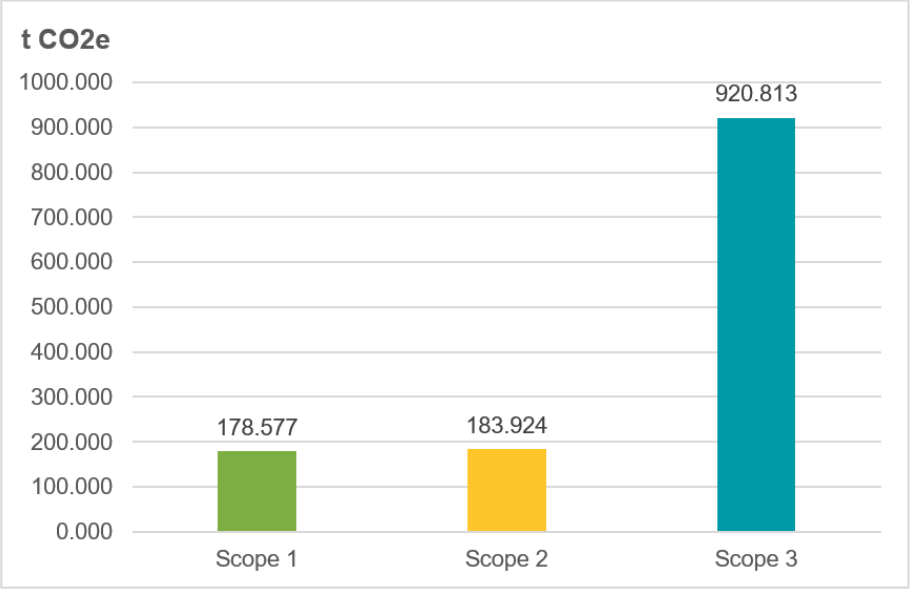

Figure 1: CO_2e emissions by scope (year 2020)

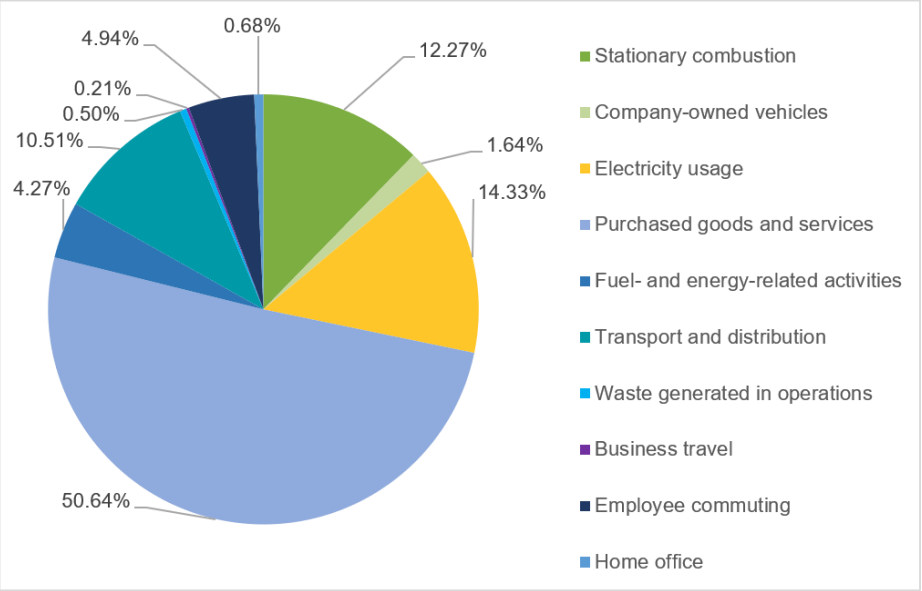

Figure 2: Emissions by category (year 2020)

Emission hotspots

The emission hotspots are depicted in figure 2. The four identified emission hotspots account for 87.76 % of the total emissions.

1. Purchased goods and services (649,894 t CO_2e; 50.64 %)
2. Electricity consumption (183,924 t CO_2e; 14.33 %)
3. Stationary combustion (157,520 t CO_2e; 12.27 %)
4. Transport and distribution (134,884 t CO_2e; 10.51 %)

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Glossary

BEIS	Department for Business, Energy and Industrial Strategy
CCF	Corporate Carbon Footprint
CDP	Carbon Disclosure Project
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalents
DNK	Deutscher Nachhaltigkeits Kodex (The Sustainability Code)
GHG	Greenhouse Gas
GRI	Global Reporting Initiative
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
UBA	Umweltbundesamt (German Environment Agency)
UNFCCC	United Nations Framework Convention on Climate Change
WBCSD	World Business Council for Sustainable Development
WRI	World Resources Institute

1 INTRODUCTION

About RAMPA GmbH & Co. KG

RAMPA is a professional partner for connecting technology, where quality comes first. The high-quality inserts provide the required stability and long-term load-bearing capacity for structures in wood, metal and plastic. As a C-component supplier, RAMPA provides its costumers with a reliable supply of connecting and fixing elements for wood applications such as threaded sleeves, threaded inserts, screw-in nuts and pan-head screws. Connections that are extremely strong and can also be undone several times can be created with these RAMPA elements (RAMPA 2021).

Subject of the report

The subject of this report is the Corporate Carbon Footprint (CCF) of RAMPA GmbH & Co. KG. A CCF is a core component of any profound climate strategy, as the CCF represents the central metric in terms of status quo, reduction targets, reduction measures, emissions scenarios, and efficiency metrics.

The aim of the assessment is to determine the amount of greenhouse gas emissions caused by the company to subsequently develop a strategy for long-term reduction. The knowledge gained will be used to understand the company's impact on the global climate and to demonstrate to employees, partners, and other stakeholders a responsible role in the company's commitment to sustainability.

The assessment covers the year 2020. The complete GmbH & Co. KG was defined as the object of consideration. In terms of a holistic approach, all relevant emissions of scopes 1, 2 and 3 are recorded. In addition to the direct emissions, the company's upstream and downstream value chain should also be considered.

The methodological basis for the analysis performed is the "Greenhouse Gas Protocol Corporate Accounting and Reporting Standard" (GHG Protocol). This international accounting standard for corporate greenhouse gas emissions is especially intended to guarantee transparency and enable comparability.

2 METHODOLOGY

With the aim of achieving a high degree of comparability, transparency and traceability of the results obtained, the carbon footprint was calculated according to the methodological specifications of the Greenhouse Gas Protocol (GHG Protocol) standard.

2.1 Greenhouse Gas Protocol

The GHG Protocol, developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), is the most widely used international standard for the accounting and reporting of corporate CO_2 emissions. The GHG Protocol Standard is internationally considered a best practice standard and is also recommended in the context of national and international CSR reporting. Both the Global Reporting Initiative (GRI) and the German Sustainability Code (DNK) explicitly mention the GHG Protocol as an accounting standard. According to the GHG Protocol, 92% of Fortune 500 companies reporting to the CDP reported in accordance with the GHG Protocol in 2016.

The addition of the "Corporate Value Chain (Scope 3) Accounting and Reporting Standard" to the "Greenhouse Gas Protocol Corporate Accounting and Reporting Standard" provides practical guidelines for the accounting and reporting of emission sources in scopes 1-3.

2.2 Greenhouse Gas Emissions and Global Warming Potential

This Corporate Carbon Footprint includes the greenhouse gases carbon dioxide, methane, nitrous oxide, perfluorocarbon, chlorofluorocarbons, sulphur hexafluoride and nitrogen trifluoride (GHG Protocol), which are taken into account by the UNFCCC and the Kyoto Protocol. Since their respective Global Warming Potentials (GWP) differ considerably, they are converted to CO_2 equivalents (CO_2e) for the sake of better comparability. Table 1 lists the greenhouse gases with their respective global warming potential in CO_2e over a period of 100 years.

Greenhouse gas	GWP
Carbon dioxide (CO_2)	1
Methane (CH_4)	27.9
Nitrous oxide (N_2O)	273
Perfluorcarbon (PCFs)	7,430 – 12,400
Chlorofluorcarbons (HFCs)	4.84 – 14,600
Nitrogen trifluoride (NF_3)	17,400
Sulphur hexafluoride (SF_6)	25,200

Table 1: Greenhouse gases and their global warming potential according to UNFCCC/Kyoto-Protocol

The aim of taking all greenhouse gases into account is to provide a meaningful representation of the company's impact on anthropogenic climate change.

2.3 Accounting principles

Generally, a carbon footprint is made up of two central components. One part is generally described as activity data or consumption data. This includes, for example, data such as kilometers traveled per means of transport, electricity usage, heating fuel consumption, or quantities of goods consumed.

On the other hand, there are emission factors. Emission factors enable the conversion of activity data into reliable emission values. As there is usually no on-site measurement of the emissions caused (primary data), secondary data (activity/consumption data) must be multiplied by emission factors. Emission factors represent the amount of greenhouse gas emissions caused in relation to a specific unit (e.g., per kilometer, per kWh, per kg). The activity data combined with the emissions factors enable the calculation of the total greenhouse gas emissions emitted.

Activity data x emission factor = total amount of GHG emissions

Example: 10,000 kilometers by car x 0.163 kg CO_2e/passenger kilometer = 1,630 kg CO_2e

If direct data on the emissions caused are available, these are to be preferred. In the ideal case, all market participants report their directly measured emissions and make this information (publicly) available. In this way, one would be able to calculate highly precise and complete corporate carbon footprints.

3 PROCESS

3.1 Preparation of the assessment

The accounting process was initiated through discussions within the frame of a workshop. The content of the workshop was the accounting scope. The following aspects and questions were considered during these discussions:

- Organizational boundaries: Which parts of the company should be accounted for?
- Operational boundaries: Which activities of the company should be accounted for within the defined organizational boundaries?
- Reference year: For which reference year should the assessment be carried out?
- Data collection: What data is available, in what form, and by whom is it collected?

3.2 Organizational boundaries

As part of the introductory discussions, the organizational boundaries of the footprint were determined. As a result, it was defined that the two localities Schwarzenbek and Büchen should be considered. Among other things, this has implications for data collection, as specific data (scopes 1 and 2) are allocated to the two sites, and scope 3 emissions are collected for the entire company.

Furthermore, it was decided to report in accordance with the **operational control approach**.

> *„A company has operational control over an operation if the former or one of its subsidiaries […] has the full authority to introduce and implement its operating policies at the operation. This criterion is consistent with the current accounting and reporting practice of many companies that report on emissions from facilities, which they operate (i.e., for which they hold the operating license). It is expected that except in very rare circumstances, if the company or one of its subsidiaries is the operator of a facility, it will have the full authority to introduce and implement its operating policies and thus has operational control. Under the operational control approach, a company accounts for 100% of emissions from operations over which it or one of its subsidiaries has operational control.*“ (GHG Protocol Corporate Standard: p. 18)

The setting of these organizational accounting boundaries subsequently has an impact on the allocation of emissions to different emission scopes and thus responsibility. By choosing this accounting approach, direct emissions from energy consumption in rental properties, for example, are assigned to the scope 1 and 2 emission areas and not to the scope 3 area (more details on scopes see section 3.3).

3.3 Operational boundaries

Within the described organizational boundaries, emissions of scopes 1, 2 and 3 are to be covered. The aim is to take full account of all emission sources if these can be determined in accordance with the principles of relevance, completeness, consistency, transparency and accuracy.

The principle of scopes is based on the distinction between direct and indirect emission sources:

- **Direct emissions:** Emissions from sources that the company either owns or directly controls.
- **Indirect emissions:** Emissions that arise from activities of the company but occur at sources owned or controlled by another company.

Based on this, a distinction is made between three scopes. According to the GHG Protocol, all emissions from scope 1 and 2 must be included in the calculation and accounting of a CCF, while the inclusion of scope 3 emissions is voluntary but recommended.

- **Scope 1:** All emissions that occur directly within the company. In other words, emissions from sources that the company either owns or directly controls.
- **Scope 2:** All indirect emissions generated for the company's energy supply. In other words, emissions from purchased electricity and thermal energy.
- **Scope 3:** Any other emissions that arise as a result of the company's activities but are owned or controlled by a third party**.**

Figure 3 clearly illustrates the distinction between scopes 1-3 and shows examples of emission sources from the respective scopes.

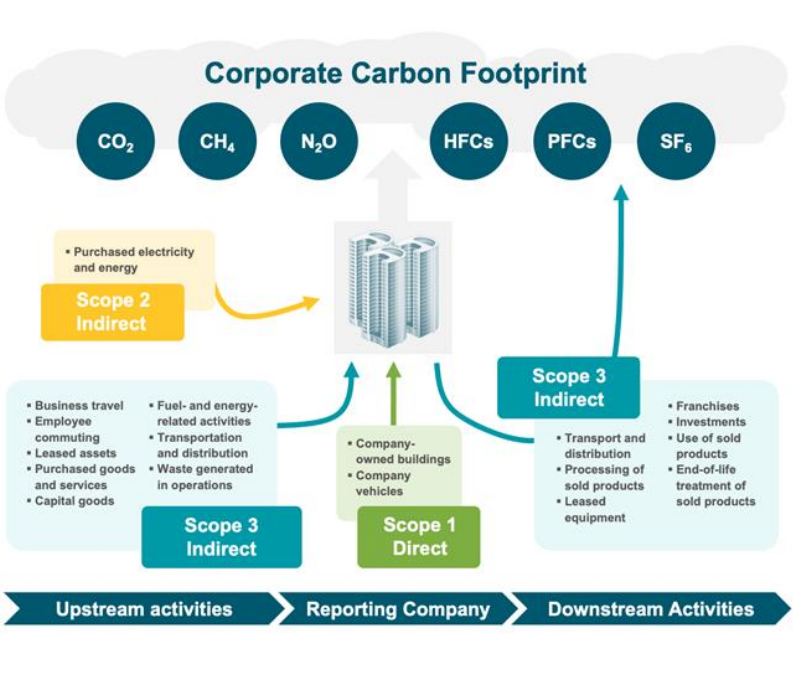

Figure 3: Overview of scopes and emission sources according to the methodology of the GHG Protocol (Source: based on GHG Protocol)

3.4 Emission sources RAMPA GmbH & Co. KG

The following emission sources were determined for RAMPA GmbH & Co. KG (see table 2):

Scope	Category		Emission source	Relevant?	Emission source – specific example
1			Stationary combustion	Yes	▪ Heating agent, fuel e.g., for generators
1			Company-owned vehicles	Yes	▪ Vehicle fleet (incl. leased vehicles)
2			Electricity usage	Yes	▪ Electricity usage
3	.1	Upstream	Purchased goods and services	Yes	▪ Raw materials ▪ Trade goods ▪ Packaging ▪ Oil ▪ Leased devices
3	.2	Upstream	Capital goods	No	
3	.3	Upstream	Fuel- and energy-related activities	Yes	▪ Indirect (upstream) emissions
3	.4	Upstream	Transport and distribution	Yes	▪ Logistics service providers (upstream and downstream)
3	.5	Upstream	Waste generated in operations	Yes	▪ Water ▪ Waste
3	.6	Upstream	Business travel	Yes	▪ Airtravel ▪ Car ▪ Railroad ▪ Overnight stays
3	.7	Upstream	Employee commuting	Yes	▪ Emissions from employee commuting
3	.8	Downstream	Upstream leased assets	No	
3	.9	Downstream	Downstream transportation and distribution	No	
3	.10	Downstream	Processing of sold products	No	
3	.11	Downstream	Use of sold products	No	
3	.12	Downstream	End-of-life treatment of sold products	No	
3	.13	Downstream	Downstream leased assets	No	
3	.14	Downstream	Franchises	No	
3	.15	Downstream	Investments	No	

Table 2: Considered emission sources RAMPA GmbH & Co. KG

The relevance analysis and thus the decision to include emission sources in the accounting process was made in exchange with RAMPA and was based on the experience of FORLIANCE. Omitted emission sources are discussed under 4.2.

3.5 Reporting period

The reporting period refers to the year 2020.

3.6 Data collection process

The data collection was carried out by RAMPA. The corresponding data collection sheets were set up by FORLIANCE based on the results of the kick-off workshop. Review and verification of the collected data was

done by FORLIANCE. Throughout the data collection period, there was a regular exchange between RAMPA and FORLIANCE. Data was collected, processed, and improved over several feedback rounds.

4 ACTIVITY DATA

As described, data was collected through individualized data collection sheets. These data collection sheets are the synthesis of the workshop and the minimum data requirements set by FORLIANCE.

4.1 Data format

The necessary data was submitted, with some data points converted/edited to reflect the appropriate pendant to the respective emission factor. As an example, the waste volume can be mentioned. The data was submitted in units of liters and was converted to kilograms based on an average density per type of waste.

4.2 Omitted emission sources

The following emission sources were not considered as a result of the relevance analysis conducted during the workshop:

- Purchased goods and services, except for raw materials and trade goods, including packaging (e.g., office equipment).
- Capital goods
- Downstream emissions

In the first assessment, the focus should be on suspected emission hotspots. Omitted emission sources can be added in future footprints. In addition, the footprint was focused on sources that can be affected by RAMPA and are thus eligible for future reduction measures.

4.3 Data consolidation

The provided data was reviewed and verified for plausibility by FORLIANCE and refined in consultation with RAMPA.

4.4 Data quality

The overall process of data collection has resulted in an extensive data catalog. Since data quality has a significant impact on the accuracy of the result, the data collected are qualitatively assessed by FORLIANCE in the following. The following categorization of activity data uses the following categories:

- High level of data accuracy (+); based on e.g., billings & real consumption data
- Moderate level of data accuracy (O); based on e.g., data extrapolation
- High level of data inaccuracy (-); based on e.g., estimates

The categorization is based on FORLIANCE's many years of experience.

SCOPE 1			
Emission source	**Quality**	**Original source**	**Comments**
Company-owned vehicles	+	Real consumption data	The data were submitted as total liters of fuel consumed and no conversion was required. Therefore, the data quality is rated as high.
Stationary combustion	+	Real consumption data	The data was submitted as total kWh of heating fuel consumed and no conversion was required. Therefore, the data quality is rated as high.

SCOPE 2			
Emission source	**Quality**	**Original source**	**Comments**
Electricity usage	+	Real consumption data	The total quantity in kWh was transmitted. This meant that no conversions were required. The data quality is rated as high.

SCOPE 3			
Emission source	**Quality**	**Original source**	**Comments**
Purchased goods and services	+	Real consumption data	The raw material, trade goods as well as packaging were completely transmitted. The total quantity was given in kg. This made the data ideal for processing. The data quality is therefore rated as high.
Leased devices	+	Real consumption data	The data was accurate because the number of devices was given. However, secondary data were used for the estimation of life span. Therefore, the data quality can be classified as high.
Fuel-and energy-related activities	+	Real consumption data	See scope 1 and 2
Waste generated in operations – water/waste	O	Real consumption data	Data was submitted as total liters of waste and m^3 of water consumed. A conversion was necessary. Therefore, the data quality is rated as medium.
Business travel	+	Real consumption data	The data was supplied very accurately, and no conversions had to be made. The data quality can be classified as high.
Employee commuting	O	Extrapolation	By means of a survey, data were collected on the mobility of employees in terms of distance to work, the means of transport used, and the number of days worked. The sample is reliable. Based on the data, the modal split could be calculated, which then formed the basis for extrapolation to the total number of employees. Since conversions had to be made and the sample size was sufficient, the reliability of the data can be described as medium.
Home office	+	Real consumption data	The data for home office hours was submitted by RAMPA on a country-specific basis. As a result, the data quality can be classified as high.

Table 3: Data quality

Data Quality – Conclusion

Overall, the data quality can be described as good. Nevertheless, an improvement could be made in the case of employee mobility. Here it would be desirable if all employees participated in the survey and no extrapolation had to be made. Likewise, data quality can be improved with respect to waste data by reporting kilogram values instead of liter values.

Nevertheless, the submitted and processed data in combination with the emission factors (see section emission factors) allow for a reliable calculation of the total emissions as well as on the emission hotspots. Thus, this emission accounting process represents a good basis for the next steps within the framework of a climate protection strategy.

5 EMISSION FACTORS

In addition to the activity data, the assessment of greenhouse gas emissions requires emission factors that enable the conversion of the activity data into emissions. For this purpose, the selection of the correct factor for each data item is of great importance. Therefore, emission factors were reviewed, evaluated, and selected in the analysis based on different criteria. These include:

- Technology: Is the correct technology depicted?
- Time: Is the correct time period represented?
- Geography: Is the correct geographic reference represented?
- Completeness: Is the value representative?
- Reliability: Are the sources and methods reliable and verified?

If it was necessary for the selection and evaluation of the emission factor, further qualitative information was requested in addition to the activity data (composition, origin, age, etc.). These criteria also lead to the following categorization:

- High accuracy (+)
- Medium accuracy (O)
- High inaccuracy (-)

The categorization is based on FORLIANCE's experience.

Main sources

The main database sources for this assessment are the following:

- *2020 UK Government Greenhouse Gas Conversion Factors for Company Reporting* (or short *2020 GHG Conversion Factors*)
- Ecoinvent 3.7.1.

The *2020 GHG Conversion Factors* were developed by the Department for Business, Energy and Industrial Strategy (BEIS). Both sources are of high quality, are internationally recognized, and are maintained by public agencies as well as not-for-profit organizations. Nevertheless, these factors must also be partially converted and adjusted to form a matching counterpart to the corresponding activity data point.

5.1 Emission factor quality

Overall, the quality of the emission factors can be rated positively. In general, it was possible to rely on high-quality emission factors. It should be noted that the selection of emission factors is always indirectly related to the available activity data.

If emission factors are adjusted in the course of subsequent assessments, these adjustments should also be implemented retroactively for the current assessment. Consistency should be maintained here.

The following table presents the quality of the emission factors (see table 4).

SCOPE 1			
Emission source	**Quality**	**Original source**	**Comments**
Company-owned vehicles	+	BEIS, UBA	The factors represent the direct emissions from vehicle use. Further life cycles are not taken into account. The quality of the factors is rated as high.
Stationary combustion	+	BEIS	The activity data allowed an accurate assessment of emissions. Specific emission factors could be used. The quality of the factors can be rated as high.

SCOPE 2			
Emission source	**Quality**	**Original source**	**Comments**
Electricity usage	+	RAMPA	RAMPA provided the emission factors directly. The emission factors are based on the measurement data of the electricity supplier. The quality is therefore classified as high.

SCOPE 3			
Emission source	**Quality**	**Original source**	**Comments**
Purchased goods and services	+/O	Ecoinvent	The activity data allowed an accurate assessment of emissions. Specific emission factors could be used. These can be further specified by transmitting the processing of the material. The quality of the factors can be rated as medium.
Leased devices	O/-	Bilans GES	The emission factors represent a generic value in kg CO_2e per euro. The quality is assessed as medium, since the application of a spend-based method represents a rough statistical approximation. The quality of the factors can be classified as medium.
Fuel-and energy-related activities	+	BEIS, UBA	The activity data allowed an accurate assessment of emissions. Specific emission factors could be used. The quality of the factors can be rated as high.
Waste generated in operations – water/waste	+	BEIS, Ecoinvent,	Depending on how waste is generally processed in Germany, emission factors were selected from the relevant databases. The quality of the factors can be classified as high.
Business travel	+	BEIS, UBA	The activity data allowed an accurate assessment of emissions. Specific emission factors could be used. As a result, the quality of the factors can be rated as high.
Employee commuting	+	BEIS, UBA	The activity data enabled an accurate assessment of emissions according to vehicle size and fuel type. Specific differentiations could also be made for other modes of transport. Therefore, specific emission factors could be used. The quality of the factors can be classified as high.
Home office	O	UBA	Country-specific electricity data was used. The emission factors for electricity and heating consumption were calculated by FORLIANCE based on UBA reports. Therefore, the quality of the factors can be classified as medium.

Table 4: Emission factor quality

6 RESULTS

The results presented hereinafter refer to RAMPA GmbH & Co. KG. The scope and time period of the assessment were described. The results of the Corporate Carbon Footprint for RAMPA are presented below according to the scopes (see section 3.3).

6.1 Total emissions RAMPA GmbH & Co. KG

According to the requirements of the GHG Protocol, a distinction should be made between the *market-based approach* and the *location-based approach* (see excursus: GHG Protocol Scope 2-Reporting). Market-specific values reflect the purchase of green electricity or low-emission electricity and therefore reflect the exact emissions of a company. RAMPA did not submit any supplier-specific values for the reporting year, so the general German electricity mix was used for accounting purposes. This approach is known as the location-based approach.

Location-based approach

According to the ***location-based approach***, total GHG emissions for RAMPA for the year 2020 amount to

1,283.313 t CO_2e.

Classification

A classification of the amount of greenhouse gas emissions caused is difficult. Above all, comparison with other companies is fundamentally difficult due to insufficient comparative data and reference values (intensity values). If the assessed emissions are put in relation to the emissions of an average German citizen (10.4 t CO_2e per year; UBA 2018; caution: comparison of data 2020 to 2018), the emissions caused correspond to the amount of greenhouse gas emissions caused by 124 German citizens within one year.

Excursus: GHG Protocol Scope 2-Reporting

The GHG Protocol requires dual reporting for scope 2 emissions with respect to purchased electricity and clear documentation of the accounting method used. Two reporting methods are to be used for purchased electricity:

1. *Market-based approach*: Emissions are accounted for according to the contractually agreed electricity mix.
2. *Location-based approach*: Emissions are accounted for according to the local average emissions of the respective electricity mix (e.g., German electricity mix).

6.2 Emissions by scope

Further analysis of the results follows the ***location-based approach***. In the first step, the results are presented according to the principle of scopes (see figure 4).

The scope 1 emissions of RAMPA sum up to 178.577 t CO_2e (13.92 % of total emissions), while scope 2 emissions amount to 183.924 t CO_2e (14.33 % of total emissions). Scope 3 emissions are significantly higher at 920.813 t CO_2e (71.75 % of total emissions).

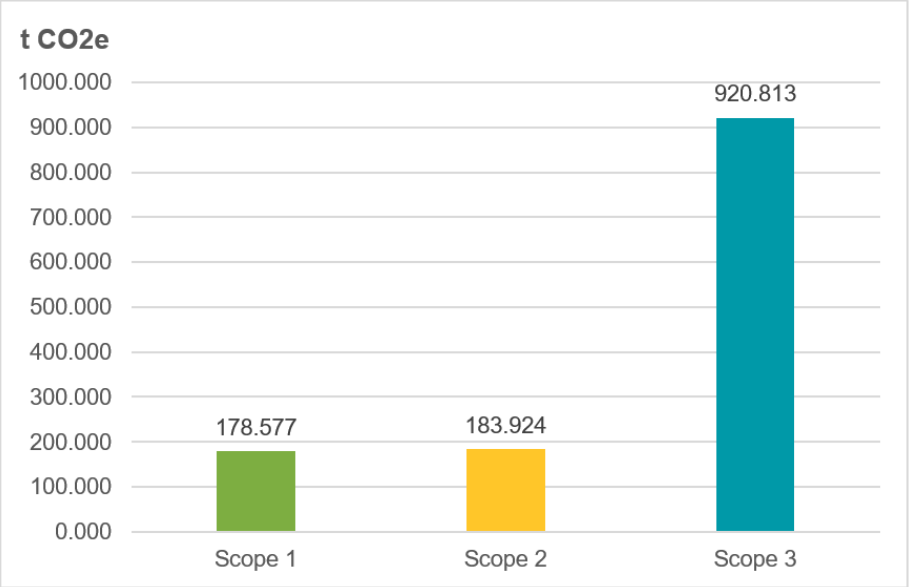

Figure 4: CO_2e emissions by scope (year 2020)

The presentation of emission sources by scopes and their subcategories is based on the methodological requirements of the GHG Protocol and serves the transparency of corporate carbon footprints. For a simplified understanding, the presentation according to emission sources within the scopes is useful. This results in the following categories (see Table 5 and Figure 5):

	Emission source	**t CO_2e**	**[%]**
Scope 1	Stationary combustion	157.520	12.27 %
	Company-owned vehicles	21.056	1.64 %
Scope 2	Electricity usage	183.924	14.33 %
Scope 3	Purchased goods and services	649.894	50.64 %
	Fuel- and energy-related activities	54.791	4.27 %
	Transport and distribution	134.884	10.51 %
	Waste generated in operations	6.383	0.50 %
	Business travel	2.687	0.21 %
	Employee commuting	63.399	4.94 %
	Home office	8.775	0.68 %

Table 5: Emissions by source

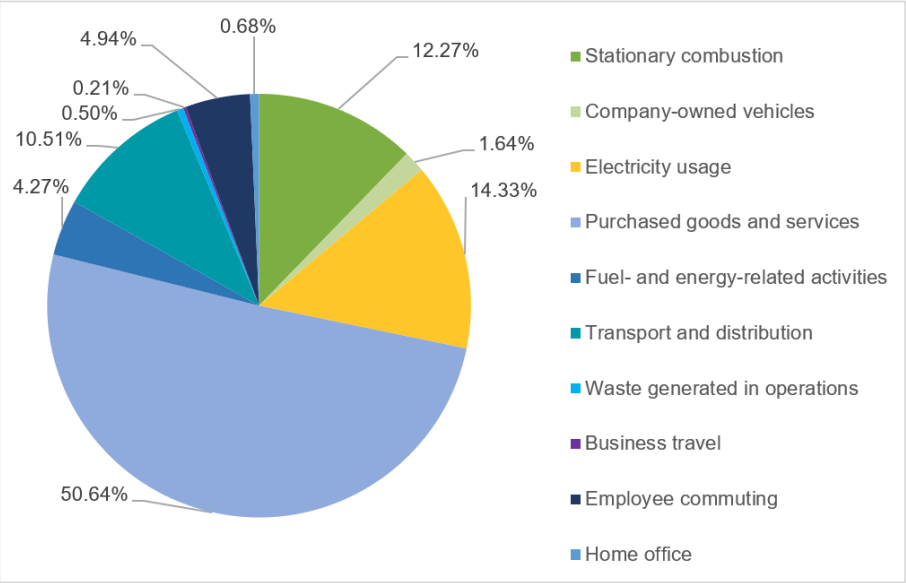

Figure 5: Percentual distribution of emissions by source

Emission hotspots

The four identified emission hotspots add up to 87.76 % of the total emissions and are presented in more detail below.

1. Purchased goods and services (649.894 t CO_2e; 50.64 %)
2. Electricity usage (183.924 t CO_2e; 14.33 %)
3. Stationary combustion (157.520 t CO_2e; 12.27 %)
4. Transport and distribution (134.884 t CO_2e; 10.51 %)

6.3 Detailed examination of the emission hotspots

A client specific breakdown of emissions allows for a detailed overview by location or subcategory. In the following, the emission hotspots are highlighted in more detail.

Differentiation of emissions due to transport and distribution

Emissions from transport and distribution were divided into process-related upstream and downstream transport. That is, in the transport of raw materials from the supplier to RAMPA and in the transport of finished products from RAMPA to the customer.

Methodologically, it should be noted that the GHG Protocol considers upstream and downstream emissions in monetary terms rather than in process terms. The criterion is the purchase and sale of services. Since the transport is not carried out by RAMPA, but service providers were commissioned, all emissions belong to scope 3, upstream.

The upstream and downstream transport processes were subdivided into subsections/transport legs since individual transport legs were carried out using different means of transport. This specification can also be found in table 6. It is noticeable that within the upstream and downstream transport the highest emissions are attributable to truck (>12t) trips. However, it should be noted that the distance traveled via water (sea freight) was highest in the upstream transport.

The process-related downstream transport emissions were differentiated according to their delivery conditions to be able to better assign responsibility for emissions generated. RAMPA informed in this context, that the particular delivery conditions "*ex works" (original: Ab Werk)* refers to the fact that the choice of mode of transport as well as its costs are carried by the customer. With the delivery condition *free delivery* (original: *Frei Haus)* the responsibility, the decision and the costs lie with RAMPA. Therefore, only the emissions for *free delivery* were accounted for with two exceptions (*CIF Denver*) and listed as emissions in the overall result.

It should be noted that part of the downstream transport process is already climate-neutral due to RAMPA´s choice of service providers. Methodologically, the emissions generated are nevertheless part of the assessment, but would no longer have to be compensated. This involves the climate-neutral transport of GLS (15.188 t CO_2e). A respective certificate was submitted to FORLIANCE.

Classification	t CO_2e	Specification	t CO_2e
Upstream transport (Scope 3, upstream)	76.991	Air freight	3.215
		Sea freight	22.332
		Truck >12 t	51.174
		Truck =40 t	0.270
Downstream transport (Scope 3, upstream)	57.893	Sea freight	0.205
		Truck >12 t	42.500
		GLS shipping (climate-neutral)	15.188

Table 6: Emissions of transport and distribution

Differentiation of emissions due to purchased goods and services

The purchased goods were grouped and listed in Table 7 with the corresponding emissions. It is evident that the raw material occupies the largest emission item. Here, machining steel contributes the most emissions. However, this is since it was used more frequently. Brass as raw material emits the most emissions per ton.

Classification	t CO_2e
Raw material	441.244
Trade goods	185.738
Packaging	4.514
Oils	17.937
Leased assets	0.461

Table 7: Emissions of purchased goods and services

Differentiation of emissions due to electricity usage

The scope 1, scope 2 and scope 3 (energy-related) emissions can be subdivided by location based on the data available. The allocation is depicted in table 8.

Schwarzenbek	t CO_2e	Büchen	t CO_2e
Stationary combustion Schwarzenbek (Scope 1)	77.131	Stationary combustion Büchen (Scope 1)	80.390
Electricity usage Schwarzenbek (Scope 2)	155.512	Electricity usage Büchen (Scope 2)	28.412
Energy related emissions Schwarzenbek (Scope 3)	39.037	Energy related emissions Büchen (Scope 3)	15.753

Table 8: Emissions of electricity usage

7 CONCLUSION & OUTLOOK

The aim of RAMPA GmbH & Co. KG was to account for the emissions from the year 2020. On the basis of a Corporate Carbon Footprint, the emissions could be calculated and analyzed.

Following the *location-based approach,* the sum of greenhouse gas emissions caused by the entire company in the year 2020 amounts to **1,283.313 t CO_2e.** This includes scope 1, 2 and 3 emissions.

In the assessment for the year 2020, purchased goods are the largest emissions item with **649.894 t CO_2e** and a share of 50.64 % of total emissions.

The data collection was carried out by RAMPA. FORLIANCE evaluated and processed the incoming data. The data quality can be classified as good, although there is always potential for improvement. The quality of the emission factors was rated as positive.

Recommendations

In addition, further planned measures can be addressed based on this assessment:

- Comparison of the CCF with other years
    - Comparison with future years to be able to analyze changes
- Developing science-based reduction targets
    - The political goal is to limit the global temperature increase to 1.5°C. These goals can be translated to the corporate level on a scientific basis.
- Development of reduction measures
    - To achieve these targets, reduction measures must be developed and implemented.
- Building a formal corporate strategy
    - The footprint is the central metric in the area of corporate climate protection. Nevertheless, this process as well as all subsequent processes should be integrated into an overall strategic process.
- Compensation of non-avoidable emissions
    - Non-avoidable emissions can be offset via high-quality climate protection projects so that net carbon neutrality can be achieved.

8 REFERENCES

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9 CONTACT

Julia Haack
julia.haack@forliance.com

Patrick Fortyr
patrick.fortyr@forliance.com

FORLIANCE GmbH
Eifelstr. 20
D-53119 Bonn
Deutschland

Tel.: 0049 228 969 119-0
Fax: 0049 228 969 119-20
E-Mail: info@forliance.com
Registriertes Büro: Bonn, Deutschland
Amtsgericht: Bonn, Deutschland HRB 21454
Geschäftsführer: Dirk Walterspacher,
Andreas Schnall

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