FORLIANCE

GROWING CLIMATE ACTION

CORPORATE CARBON FOOTPRINT 2023

RAMPA GmbH & Co. KG

November 2024

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 2023. The complete RAMPA 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 2023

The total greenhouse gas emissions caused by RAMPA GmbH & Co. KG in the year 2023 amounts to 1,199.10 t CO_2e (*market-based approach*).

Of this total, 11.12% can be attributed to emission sources that the company either owns or directly controls (Scope 1), 0.07% to E-mobility in Scope 2, and 88.81% to all other emission sources that arise as a result of the company's activities but are owned or controlled by a third party (Scope 3, e.g. business travel, employee commuting).

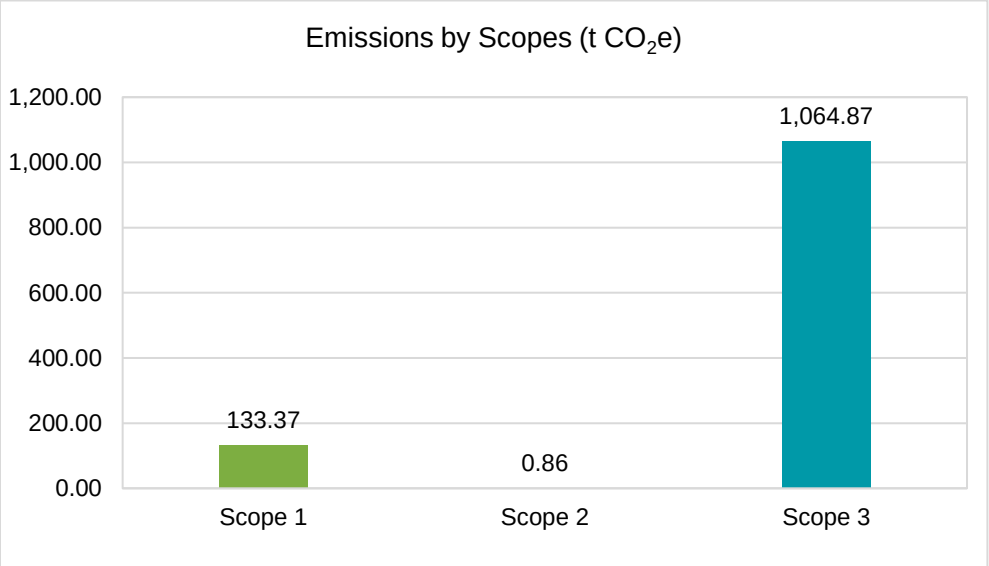

Figure 1: CO_2e emissions by scope (year 2023)

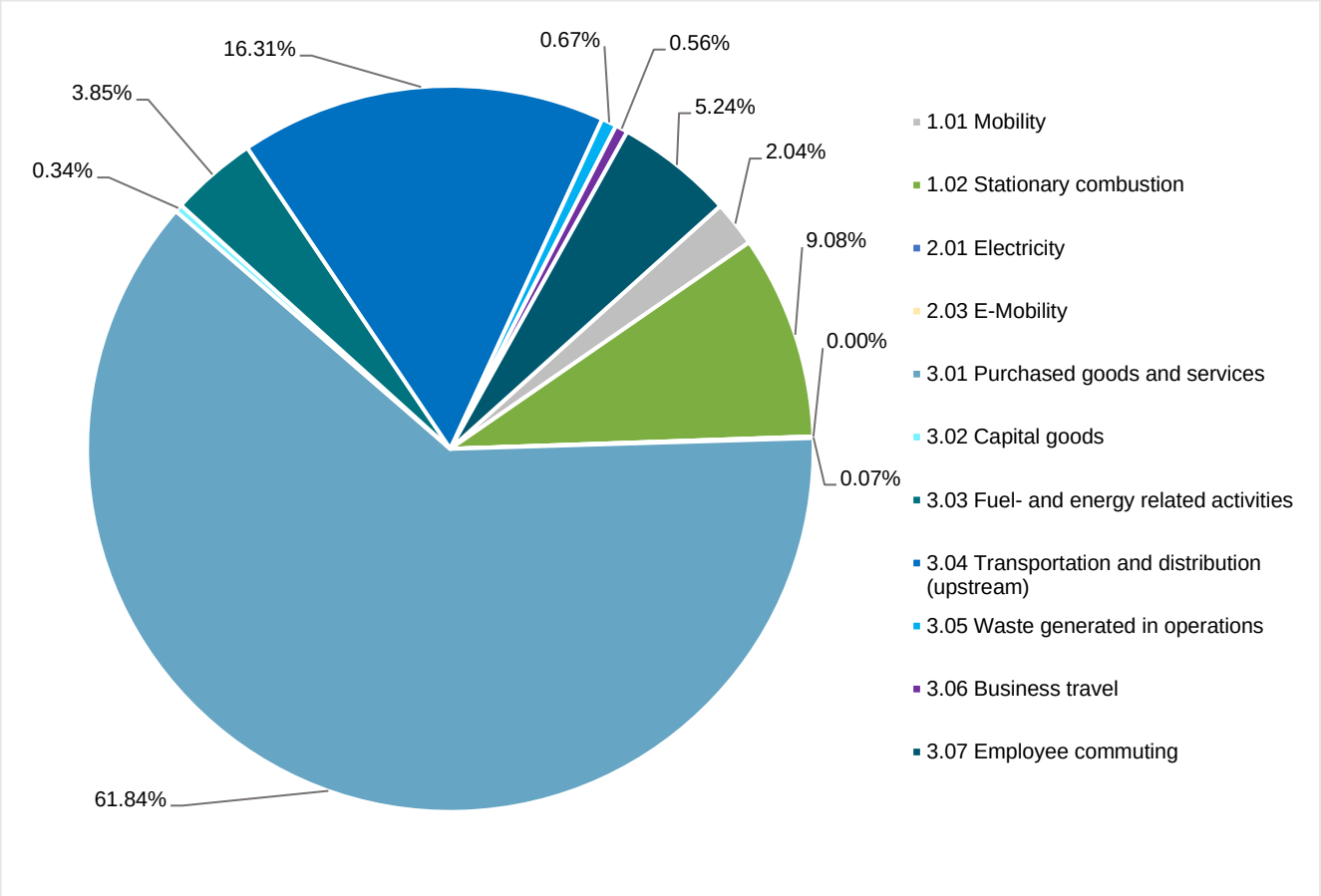

Figure 2: CO_2e emissions by category (year 2023)

Emission Hotspots

The emission hotspots are depicted in Figure 2. The three identified emission hotspots account for 87.23% of the total emissions.

1. Purchased goods and services (741.52 t CO_2e; 61.84%)
2. Transport and distribution (upstream) (195.53 t CO_2e; 16.31%)
3. Stationary combustion (108.93 t CO_2e; 9.08%)

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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 customers 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, emission 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 2023. The complete RAMPA 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 to be recorded. In addition to the direct emissions, the company's upstream and downstream value chain should also be considered. This has now happened for the fourth year in a row, which allows conclusions to be drawn about the development of emissions.

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

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

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 CO2e/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 built on the experience of the initial assessment for the last three reporting years (2020, 2021, and 2022) and further discussions.

3.2 Organizational boundaries

The organizational boundaries have not been changed compared to the base year.

The **operational control approach** continues to be applied:

> „*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: S. 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.

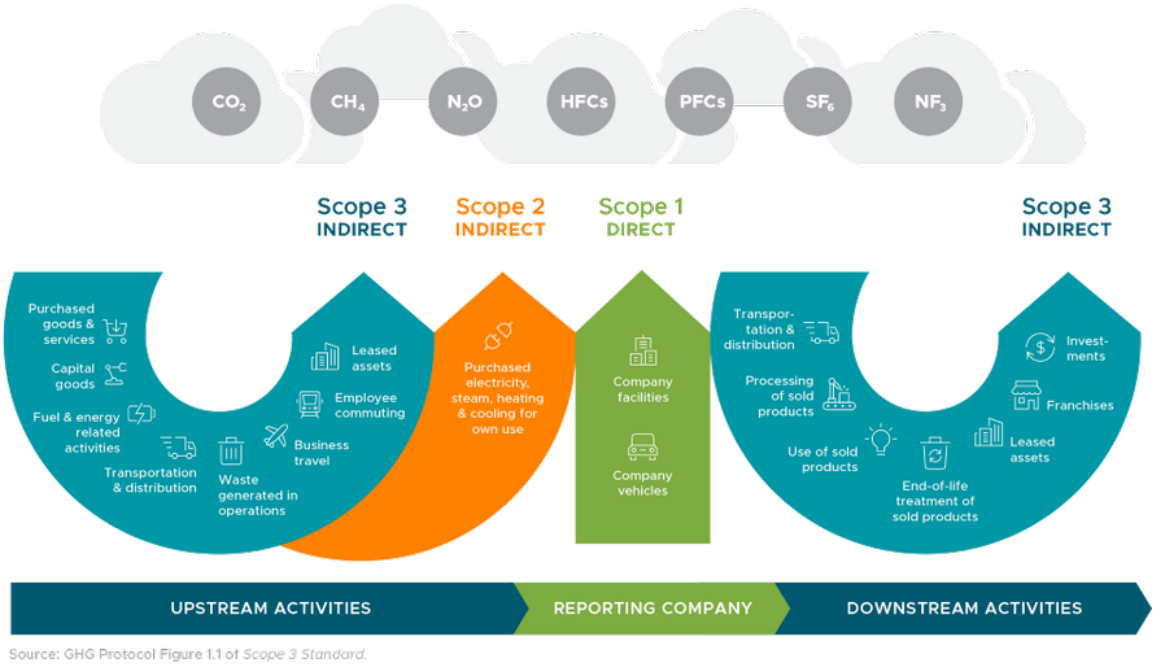

Figure 3: Overview of scopes and emission sources according to the methodology of the GHG Protocol (Source: based on GHG Protocol)

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
2		E-Mobilität	Yes	▪ Electric mobility

3	.1	Upstream	Purchased goods and services	Yes	▪ Raw materials ▪ Trade goods ▪ Packaging ▪ Oil ▪ Water supply
3	.2		Capital goods	Yes	▪ Projector ▪ Notebook ▪ Server room cooling
3	.3		Fuel- and energy-related activities	Yes	▪ Indirect (upstream) emissions
3	.4		Transport and distribution	Yes	▪ Logistics service providers (upstream and downstream)
3	.5		Waste generated in operations	Yes	▪ Wastewater ▪ Residual waste ▪ Waste paper ▪ Plastic/yellow bag ▪ Organic waste
3	.6		Business travel	Yes	▪ Air travel ▪ Car ▪ Railroad ▪ Taxi/Uber ▪ Overnight stays
3	.7		Employee commuting	Yes	▪ Auto, Train, Public transportation, etc. ▪ Homeoffice
3	.8		Upstream leased assets	Yes	▪ As part of the operational control approach, energy emissions from leased assets fall under Scopes 1 and 2
3	.9	Downstream	Downstream transportation and distribution	No	
3	.10		Processing of sold products	No	
3	.11		Use of sold products	No	
3	.12		End-of-life treatment of sold products	No	
3	.13		Downstream leased assets	No	
3	.14		Franchises	No	
3	.15		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 2023.

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 data collection of the previous year. The data on employee mobility was queried and collected by RAMPA. 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 and submitted according to the previous year to allow for comparison.

4.1 Data format

Most of the data was submitted in the requested form. Only a few data points were converted/edited to represent the appropriate counterpart to the respective emission factor.

4.2 Omitted emission sources

The following emission sources were not considered:

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

Unlike in previous years, the capital goods category was included in the scope of accounting for the first time. Raw materials, merchandise and packaging were included in the purchased goods category. Other consumables were not accounted for. Scope 3 *downstream* emissions were also not included in this footprint. The footprint focuses on sources that RAMPA can influence to implement mitigation measures. Omitted emission sources may be added in the future. Comparison to previous years is possible.

Rationale for the exclusion of individual categories from Scope 3 (as of August 2024)

For the following categories, RAMPA feels compelled to exclude them from the accounting.

Category 9: Downstream transportation and distribution

The category "Downstream Transport and Distribution" refers to the transport and distribution of products after they have left the RAMPA factory. At RAMPA, all transports shipped under the delivery condition "ex works" are attributed to the customers, as they are responsible for the transport and the resulting emissions. In terms of emissions, however, RAMPA takes into account all deliveries with franking "free of charge". In these cases, RAMPA chooses the transport company and thus has an influence on the selection of the transport partner. The emissions from these free home deliveries are recorded and taken into account in the "Upstream Transport and Distribution" category. Since all other transports are outside the direct sphere of influence of RAMPA, they are not taken into account in the calculation of Scope 3 emissions.

Category 10: Processing of sold products

With its fasteners, RAMPA supplies an intermediate product that is used in a wide range of end products in different industries. Due to the wide range of possible uses and the supply to various branches of industry, it is not possible for RAMPA to make a well-founded statement about the emission costs that arise during the further processing of the products. Since the processing is in the hands of the respective end customers and strongly depends on the specific industrial processes, about which RAMPA does not have detailed information, an accurate quantification of emissions in this category is not feasible.

Category 11: Use of sold products

RAMPA supplies a large number of customers from a wide range of industries with its products. Due to the wide range of applications and the considerable diversity of its customers, it is not possible for RAMPA to track or quantify the use of its products in a systematic manner. The individual application types of fasteners vary greatly and are beyond RAMPA's direct sphere of influence. For these reasons, a well-founded recording of the emissions caused by product use is not feasible.

Category 12: End-of-life treatment of sold products

RAMPA supplies its products to a wide range of customers and industries, often passing them on to end customers via distributors. Due to the great diversity of the clientele and the complex distribution chains across different dealers, it is not possible for RAMPA to obtain reliable information about the disposal of the products at the end customers. The useful life, the different disposal practices and the dispersion of the products make it impossible to track and quantify the associated emissions.

Category 13: Downstream leased assets

RAMPA does not own any assets or assets that are subleased to third parties. The Company does not engage in any downstream leasing activities that could involve leasing equipment or products from RAMPA to external parties.

Category 14: Franchises

RAMPA does not operate a franchise model and is not involved in any franchise activities.

Category 15: Investments

RAMPA's business model does not include any financial holdings or investments that would fall within the scope of this category. The "Investments" category is primarily relevant for financial institutions and companies that pursue active investment strategies.

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 kilometers driven were transmitted accurately. The data quality can be classified as high.
Stationary combustion	+	Real consumption data	The data was submitted as total kWh consumed. No conversion was necessary. 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. A conversion was not necessary. The data quality is rated as high.
E-Mobility	+/O	Real consumption data	The total quantity was transmitted in km. A conversion was not necessary since there are suitable emission factors. Nevertheless, kWh values are preferable. The data quality is rated as high to medium.

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.
Capital goods	+	Real consumption data	The data was delivered very accurately and no conversions had to be made. The data quality can be classified as high.
Fuel-and energy-related activities	+	Real consumption data	See scope 1 and 2.
Transport and distribution (upstream)	+	Real consumption data	The data was delivered very accurately and no conversions had to be made. The data quality can be classified as high.
Waste generated in operations – water/waste	O	Real consumption data	Data was submitted as total liters of waste and m3 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	+	Survey results	By means of a survey, data was collected on the mobility of employees in terms of distance to work, the means of transport used and the number of working days. The data quality can be classified as high.
Home office	+	Survey results	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 very good. Nevertheless, there is room for improvement regarding e-mobility and waste data. Kilowatt or weight data would be more meaningful compared to distance and volume data, as the conversion would be omitted.

Overall, the data submitted and processed, in combination with the emission factors (see Emission Factors section), allow a robust statement on the magnitude of total emissions as well as on the emission focal points. Thus, this balance 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 many years of experience.

Main sources

The main database sources for this assessment are the following:

- **Department for Business, Energy & Industrial Strategy (BEIS)**. UK Government GHG Conversion Factors for Company Reporting. 2023.
- **Ecoinvent 3.10**
- **Lenovo.** Product Carbon Footprint (PCF) Information Sheets. 2023.
- **Umweltbundesamt (UBA)** – several research papers and reports.

All 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

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	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	+	UBA	A precise selection of the emission factors was possible. Specific emission factors could therefore be used. The quality is therefore classified as high.
E-Mobility	+	BEIS	The activity data allowed an accurate assessment of emissions. Specific emission factors could be used.

SCOPE 3			
Emission source	**Quality**	**Original source**	**Comments**
Purchased goods and services	+/O	BEIS, Ecoinvent 3.10	For a large part of the data, a precise selection of emission factors was possible. Therefore, specific emission factors could be used. The quality of the factors can be rated as medium.
Capital Goods	+/O	BEIS, Lenovo	For a large part of the data, a precise selection of emission factors was possible. Therefore, specific emission factors could be used. The quality of the factors can be rated as medium.
Fuel-and energy-related activities	+	UBA, BEIS	A precise selection of emission factors was possible. Therefore, specific emission factors could be used. The quality of the factors can be rated as high.
Transport and distribution (upstream)	+	BEIS	A precise selection of the emission factors was possible. Specific emission factors could therefore be used. The quality of the factors is rated as high.
Waste generated in operations – water/waste	+	Ecoinvent 3.10	A precise selection of emission factors was possible. Therefore, specific emission factors could be used. The quality of the factors can be classified as high.
Business travel	+	BEIS	A precise selection of emission factors was possible. Therefore, 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	BEIS, 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

Conclusion on 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 during subsequent assessments, these adjustments should also be implemented retroactively for the current assessment. Consistency should be maintained here.

6 RESULTS

The results presented hereinafter refer to RAMPA GmbH & Co. KG. The scope and 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 has been made since 2015 between the market-based approach and the location-based approach (see Excursus GHG Protocol Scope 2 Reporting). RAMPA was able to submit supplier-specific emission values for the accounting year 2023, so that the emissions were accounted for according to the contractually guaranteed electricity mix. This approach is called the market-based approach.

Market-based approach

According to the ***market-based approach***, total GHG emissions for RAMPA for the year 2023 amount to

1,199.10 t CO_2e.

Location-based approach

According to the ***location-based approach***, total GHG emissions for RAMPA for the year 2023 amount to

1,415.31 t CO_2e.

Classification

It is difficult to classify the amount of greenhouse gas emissions caused. Comparison with other companies is fundamentally difficult due to insufficient comparative data and reference values (intensity values). If the emissions reported are compared with the emissions of an average German in 2024 (10.3 t CO_2e per year; Statista 2024), the emissions caused by RAMPA correspond to the amount of greenhouse gas emissions caused by 116 German citizens in 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 ***market-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 GmbH & Co. KG sum up to 133.37 t CO_2e (11.12% of total emissions). Scope 2 emissions amount to 0.86 t CO_2e (0.07% of total emissions). Scope 3 emissions are significantly higher at 1,064.87 t CO_2e (88.81% of total emissions).

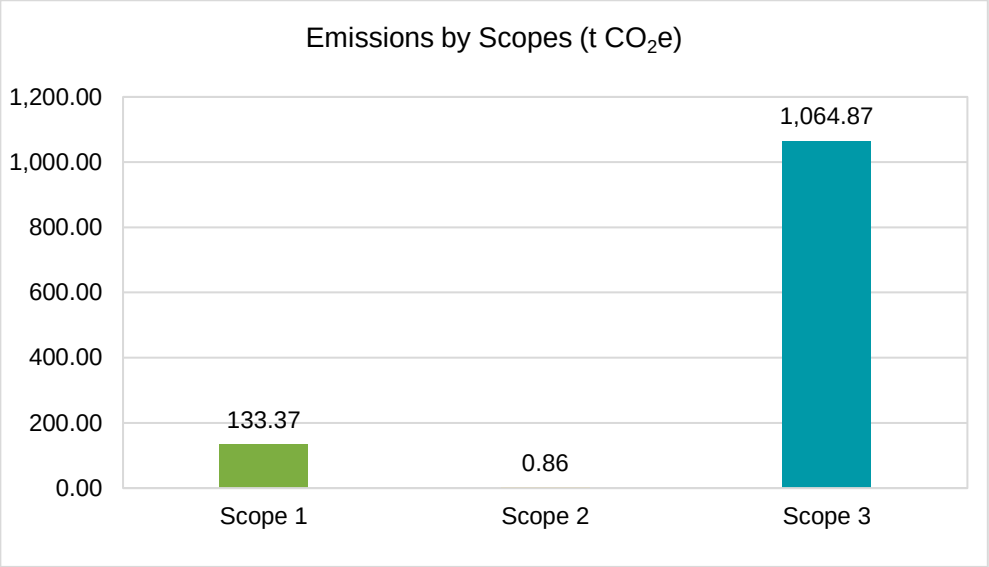

Figure 4: CO_2e emissions by scope (year 2023)

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 sources	t CO_2e	%
Scope 1	Stationary combustion	108.93	9.08
	Company-owned vehicles	24.44	2.04
Scope 2	Electricity usage	0.00	0.00
	E-Mobility	0.86	0.07
Scope 3	Purchased goods and services	741.52	61.84
	Capital goods	4.12	0.34
	Fuel- and energy-related activities	46.18	3.85
	Transport and distribution (upstream)	195.53	16.31
	Waste generated in operations	8.05	0.67
	Business travel	6.67	0.56
	Employee commuting (including home office)	62.80	5.24

Table 5: Emissions by source

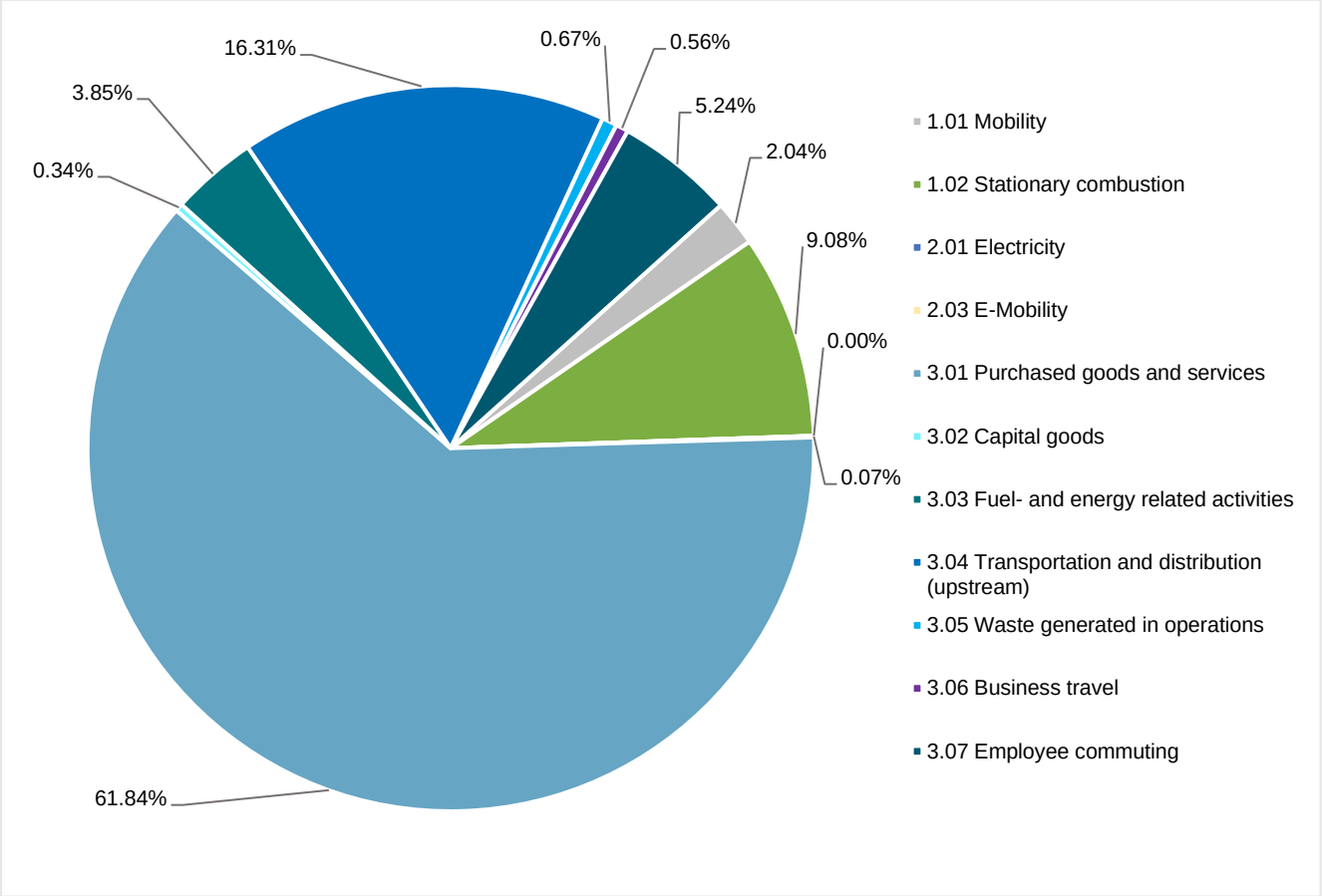

Figure 5: Percentual distribution of emissions by category (Year 2023)

Emissions-Hotspots

From this plot (see Table 5 and Figure 5), the emission hotspots are very clear. The three identified emission hotspots account for 87.23% of the total emissions.

1. Purchased goods and services (741.52 t CO_2e; 61.84%)
2. Transport and distribution (upstream) (195.53 t CO_2e; 16.31%)
3. Stationary combustion (108.93 t CO_2e; 9.08%)

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 purchased goods

The purchased goods were grouped and listed in Table 6 with the corresponding quantities and emissions. The overview shows that the purchased raw material represents the largest emission item. The free-cutting steel is a major contributor to the emissions. It should be noted, however, that the emission intensity (kg CO_2e/kg material) of Nylon is significantly higher than that of steel. In the case of merchandise, most emissions are caused by the steel purchased.

Classification	kg	t CO_2e
Raw material	**123,332.00**	**332.33**
Machining steel	102,446.00	217.19
Stainless steel	9.817.00	50.16
Brass	11,069.00	64.98
Trade goods	**176.615.86**	**401.83**
Trade goods steel	164,052.89	347.79
Trade goods brass	3,572.94	20.97
Trade goods stainless steel	3,767.49	19.25
Trade goods zinc	5,180.36	13.42
Trade goods plastic	42.18	0.39
Packaging	**2,926.52**	**2.70**
Packaging cardboard	2,772.62	2.22
Packaging foils	153.90	0.48
Oils	**3,252.60**	**4.56**

Table 6: Emissions of purchased goods and services.

Differentiation of emissions due to transport and distribution

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

Methodologically, it should be noted here that the GHG Protocol does not understand upstream and downstream emissions in process terms, but in monetary terms. The criterion is the purchase and sale of services. Since transportation is not carried out by RAMPA, but service providers were contracted, all emissions belong to Scope 3, upstream.

The upstream and downstream transport was divided into sections, as individual sections were covered by different means of transport. This specification can also be found in Table 7. It is striking that the highest emissions in upstream transport are attributable to sea freight, although trucks are more emission-intensive (emissions per ton-kilometre (kg CO_2e/tkm) are higher) modes of transport than ships. In the case of downstream transport, the distance travelled by truck is the biggest contributor to emissions.

The process-related downstream transport emissions were differentiated according to the means of transport as well as their delivery conditions in order to be able to better allocate the responsibility for emissions incurred. RAMPA informed in this context that the delivery condition *“ex works” (original: Ab Werk)* means that the decision of the mode of transport as well as the costs are borne by the customer. In case of the delivery condition “*free delivery” (original: Frei Haus),* the responsibility, the decision as well as the costs lie with RAMPA itself. Therefore, in this case only the emissions for free domicile were accounted for and listed as emissions in the overall result.

It should be noted that part of the process-related downstream transport has already been compensated by RAMPA's selection of service providers. The resulting emissions are methodically still part of the balance but would not have to be compensated anymore. This is the climate-neutral transport of GLS (14.54 t CO_2e). A corresponding certificate was submitted to FORLIANCE.

Classification	t CO_2e	Specification	t CO_2e
Upstream Transport (Scope 3, *upstream*)	160.93	Air freight	7.54
		Sea freight	78.27
		Truck > 12 t	75.12
		Truck (vkm)	0.01
Downstream Transport (Scope 3, *upstream*)	34.60	FedEx® Air freight	0.61
		Truck >12 t (without FedEx®)	18.61
		FedEx® Truck	0.84
		GLS Shipping (CO_2e Compensation)	14.54

Table 7: Emissions of transport and distribution

Differentiation of emissions due to electricity usage

The energy-related emissions could be broken down by site based on the data available. The allocation is shown in Table 8.

Schwarzenbek	t CO_2e	Büchen	t CO_2e
Stationary combustion Schwarzenbek (Scope 1)	20.69	Stationary combustion Büchen (Scope 1)	88.24
Electricity usage Schwarzenbek (Scope 2)	0.00	Electricity usage Büchen (Scope 2)	0.00
Energy related emissions Schwarzenbek (Scope 3)	3.73	Energy related emissions Büchen (Scope 3)	36.20

Table 8: Emissions of energy usage

7 DEVELOPMENT & ANALYSIS

This chapter serves to compare the third balance sheet with the subsequent one (fourth balance sheet). The main changes are to be highlighted and examined in more detail.

7.1 Development of emissions in comparison

Compared to the previous year, total emissions decreased by 58.40%. This is due to a 60.50% reduction in Scope 3 emissions. This significant reduction can be seen in all major Scope 3 categories, including purchased goods, transport and business travel. Scope 2 emissions are falling slightly (9.60%) in contrast to Scope 1 emissions, which are falling by 28.07%. Details can be found in Table 9 and Figure 6.

	2022	2023	Development	
	t CO_2e	t CO_2e	t CO_2e	%
Total	2,882.18	1,199.10	**-1,683.08**	**-58.40%**
Scope 1	185.41	133.37	**-52.04**	**-28.07%**
Stationary combustion	161.24	108.93	-52.31	-32.44%
Company-owned vehicles	24.17	24.44	0.28	1.14%
Scope 2	0.95	0.86	**-0.09**	**-9.60%**
Electricity usage	0.00	0.00		
E-Mobility	0.95	0.86	-0.09	-9.60%
Scope 3	2,695.82	1,064.87	**-1,630.95**	**-60.50%**
Purchased goods and services	2,209.37	741.52	-1,467.85	-66.44%
Capital goods	0.00	4.12	4.12	
Fuel- and energy-related emissions	53.20	46.18	-7.02	-13.20%
Transport and distribution (upstream)	355.96	195.53	-160.43	-45.07%
Waste generated in operations	6.22	8.05	1.83	29.46%
Business travel	11.30	6.67	-4.63	-40.98%
Employee commuting (including home office)	59.78	62.80	3.02	5.05%

Table 9: Development of emissions in comparison

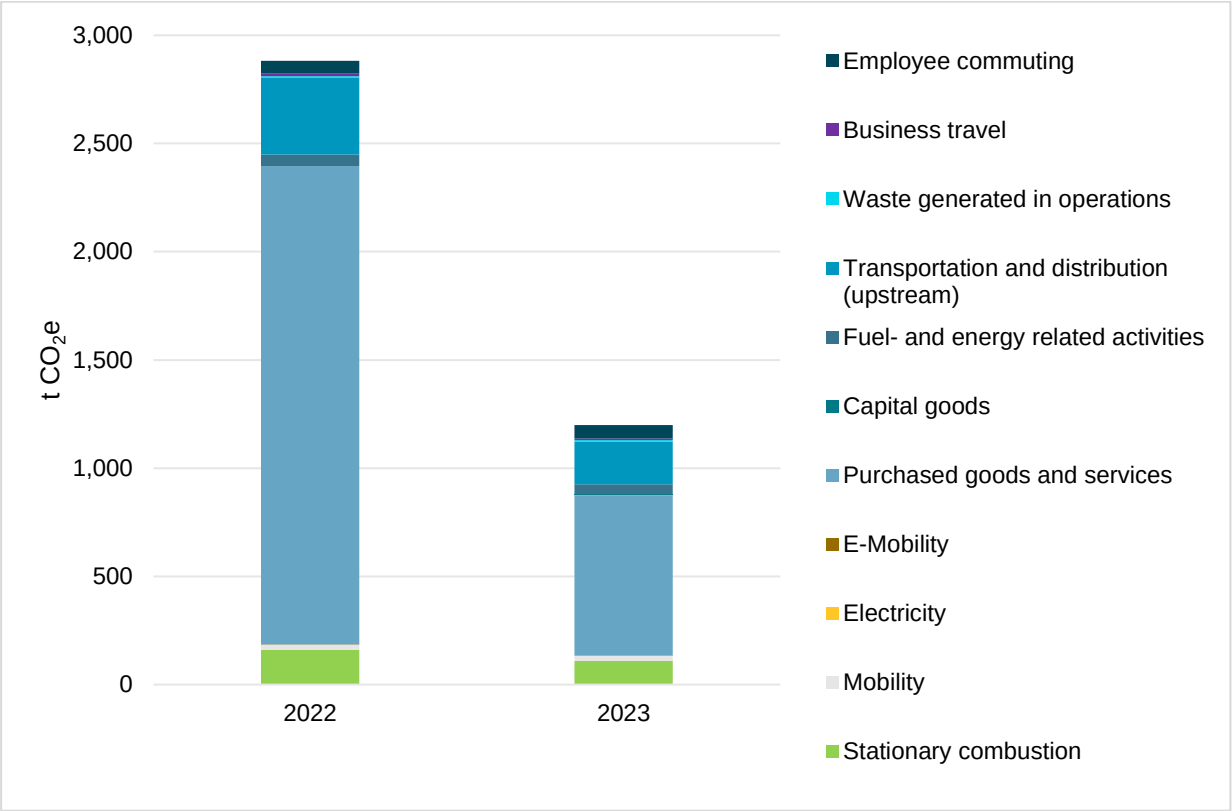

Figure 6: Development of emissions in comparison

7.2 Analysis of the emission development

The following section takes a closer look at the reasons for the significant changes compared to the base year.

Development of energy related emissions

Energy consumption has changed significantly. Natural gas and electricity consumption has fallen in Schwarzenbek and risen in Büchen. Vehicle fleet emissions have also increased. A corresponding emissions development can be seen in the Scope 3 area, energy-related emissions.

	2022	2023	Development		
Differentiation	**Amount**	**Amount**	**Amount**	**%**	**t CO_2e**
Natural gas (Schwarzenbek, kWh)	398,720.00	113,103.00	-285,617.00	-71.63%	-71.57%
Natural gas (Büchen, kWh))	484,611.00	482,381.00	-2,230.00	-0.46%	-0.25%
DE Mix / green electrcity (Schwarzenbek, kWh)	547,057.00	7,608.00	-539,449.00	-98.61%	
DE Mix / green electrcity (Büchen, kWh)	78,944.00	527,583.00	448,639.00	568.30%	
Vehicle fleet car - medium diesel (vkm)	123,129.00	146,220.00	23,091.00	18.75%	18.15%
Vehicle fleet car - medium gasoline (vkm)	11,490.00	0.00	-11,490.00	-100.00%	-100.00%
Vehicle fleet car - small gasoline (vkm)	9,260.00	0.00	-9,260.00	-100.00%	-100.00%
E-Mobility (vkm)	44,337.00*	52,781.00*	8,444.00	19.05%	-9.60%

**Kilometers that cause additional energy consumption, outside of electricity consumption at the company premises*

Table 10: Development of Scope 1 and 2 consumptions in comparison

Development of purchased goods and services

Emissions in the purchased goods category have decreased significantly (66.44%). This significant decline is mainly due to a significant reduction in purchased volumes. The essential factor here is the amount of free-cutting steel, as well as the amount of steel as a commodity. But significantly lower quantities were also purchased for other goods. One reason for the decline in purchased goods and services at RAMPA in the 2023 financial year is the inventory build-up of the past year. The lower emissions are mainly due to the lower purchasing volume, as the global average factors for 2023 reflect higher emissions compared to the previous year. This can be observed especially in the steel and brass sector.

	2022	2023	Development		
Differentiation	**kg**	**kg**	**kg**	**%**	**t CO_2e**
Raw material	**543,448.50**	**123,332.00**	**-420,116.50**	**-77.31%**	**-72.19%**
Machining steel	509,567.00	102,446.00	-407,121.00	-79.90%	-78.46%
Stainless steel	11,874.00	9,817.00	-2,057.00	-17.32%	-14.64%
Brass	22,007.50	11,069.00	-10,938.50	-49.70%	-49.15%
Trade goods	**449,282.79**	**176,615.86**	**-272,666.93**	**-60.69%**	**-59.24%**
Trade goods steel	398,089.53	164,052.89	-234,036.64	-58.79%	-55.85%
Trade goods brass	14,573.03	3,572.94	-11,000.09	-75.48%	-75.21%
Trade goods stainless steel	6,373.25	3,767.49	-2,605.76	-40.89%	-38.96%
Trade goods zinc	30,177.90	5,180.36	-24,997.54	-82.83%	-83.48%
Trade goods plastic	69.08	42.18	-26.90	-38.94%	-38.93%
Packaging	**13,300.49**	**2,926.52**	**-10,373.97**	**-78.00%**	**-79.38%**
Packaging cardboard	12,396.49	2,772.62	-9,623.87	-77.63%	-78.37%
Packaging foils	904.00	153.90	-750.10	-82.98%	-83.05%
Oils	**11,181.05**	**3,252.60**	**-7,928.45**	**-70.91%**	**-70.91%**

Table 11: Development of purchased goods and services in comparison

Development of transport and distribution (upstream)

Compared to the previous year, the distances travelled and thus also the associated emissions have been significantly reduced. Particularly noteworthy here is upstream transport, i.e. transport for the procurement of goods.

		2022	2023	Development		
		tkm	**tkm**	**tkm**	**%**	**t CO_2e**
Upstream	Air freight	28,107.48	6,860.41	-21,247.07	-75.59%	-73.67%
	Sea freight	6,314,128.07	5,923,879.19	-390,248.88	-6.18%	-23.20%
	Truck > 12t	423,576.81	212,123.96	-211,452.85	-49.92%	-54.12%
	Truck >12t (vkm)	**900.00**	**10.00**	**-890.00**	**-98.89%**	**-98.92%**
Downstream	Air freight (without FedEx®)	32,31	0	-32,31	-100%	-100%
	FedEx® Air freight		*			
	Truck > 12t (without FedEx®)	111.108,64	52.556,11	-58.552,53	-52,70%	-56,67%
	FedEx® Truck		*			
	GLS Shipping (CO_2e Compensation)		*			-19,87%

**The well-to-wheel (WTW) emissions calculated by the transporter were used instead of calculating the tkm.*

Table 12: Development of transported tkms and vkms in comparison

Development of business travel

Business trips have been significantly reduced compared to the previous year, resulting in a significant reduction in emissions. Compared to the previous year, there is a reduction of 40.98%. Within this category, the increase in emissions caused using these modes of transport should be highlighted: passenger cars medium gasoline, flights < 750 km per route, and flights 750 - 3,700 km per route.

	2022	2023	Development		
Differentiation	**Amount**	**Amount**	**Amount**	**%**	**t CO_2e**
Car - Medium Diesel (vkm)	6,863.00	2,494.00	-4,369.00	-63.66%	-63.84%
Car – Medium Gasoline (vkm)	152.00	2,271.00	2,119.00	1,394.08%	**1,341.41%**
Car - Small Gasoline (vkm)	374.10	48.00	-326.10	-87.17%	-87.67%
Train - Long distance (pkm)	5,287.00	4,885.00	-402.00	-7.60%	-7.62%
Taxi/Uber (pkm)	233.00	106.00	-127.00	-54.51%	-54.55%
Flight < 750 km per route (pkm)	682.00	1,786.00	1,104.00	161.88%	**190.32%**
Flight 750 – 3,700 km per route (pkm)	5,008.00	6,373.00	1,365.00	27.26%	**54.10%**
Flight > 3,700 km per route (pkm)	43,232.00	13,512.00	-29,720.00	-68.75%	-57.71%
Hotel (N° overnight stays)	47.00	36.00	-11.00	-23.40%	-16.64%

Table 13: Development of traveled pkms and vkms, as well as the number of overnight stays, in comparison

Conclusion Comparison

There is a significant reduction in emissions. Due to the low purchase of goods, a lower emission load was caused in this area, which in turn resulted in a reduction in emissions in the transport of goods.

8 CONCLUSION & OUTLOOK

The aim of RAMPA GmbH & Co. KG was to have the emissions from the year 2023 accounted and to enable an emissions comparison.

According to the market-based approach, the total greenhouse gases caused for the entire company in 2023 amount to **1,199.10 t CO_2e.** This includes Scope 1, 2 and 3 emissions. This is a total reduction of emissions of **58.40%** in comparison to 2022**.** The significant decrease in purchased goods, resulting in a reduction in the transport of these goods, is mainly responsible for the significant reduction in overall emissions.

The data collection was carried out by RAMPA. FORLIANCE evaluated and processed the incoming data. The data quality can be classified as good. The quality of the emission factors was rated as positive.

Process

RAMPA has now had a corporate carbon footprint drawn up for the fourth time in a row. The repetition allows a direct comparison of the balance sheet years.

Recommendations

To consolidate efforts toward decarbonization, FORLIANCE recommends:

- Comparison of the CCF with other years
  - This allows the forecasting of a general trend
  - The regular review of emissions also enables the rapid identification of emission hotspots and corresponding intervention options

- Verification of the data of significant emission changes
  - Only by comparison with the previous year is a change in emissions visible. Significant changes should be reviewed

- Compensation of non-avoidable emissions
  - This is achieved by investing in high-quality climate protection projects, so that climate neutrality can be achieved in the long term.

9 ANNEX

Emission details

Scope	Emission source according to GHG Protocol	Own category	Specifics	t CO_2e	%
Scope 1	1.01 Mobility	Car - medium	diesel	24.44	2.04%
Scope 1	1.02 Stationary combustion	Natural gas		20.69	1.73%
Scope 1	1.02 Stationary combustion	Natural gas		88.24	7.36%
Scope 2	2.01 Electricity	Green electricity		0.00	0.00%
Scope 2	2.01 Electricity	Green electricity		0.00	0.00%
Scope 2	2.03 E-Mobility	Car- small	Electricity	0.86	0.07%
Scope 2	2.03 E-Mobility	Car- medium	Electricity	0.00	0.00%
Scope 3 (upstream)	3.01 Purchased goods and services	Machining steel	Raw material	217.19	18.11%
Scope 3 (upstream)	3.01 Purchased goods and services	Stainless steel	Raw material	50.16	4.18%
Scope 3 (upstream)	3.01 Purchased goods and services	Brass	Raw material	64.98	5.42%
Scope 3 (upstream)	3.01 Purchased goods and services	Steel	Trade goods	347.79	29.00%
Scope 3 (upstream)	3.01 Purchased goods and services	Brass	Trade goods	20.97	1.75%
Scope 3 (upstream)	3.01 Purchased goods and services	Stainless steel	Trade goods	19.25	1.61%
Scope 3 (upstream)	3.01 Purchased goods and services	Zinc (zinc die casting)	Trade goods	13.42	1.12%
Scope 3 (upstream)	3.01 Purchased goods and services	Nylon (Plastic)	Trade goods	0.39	0.03%
Scope 3 (upstream)	3.01 Purchased goods and services	Paper	Packing cartons	2.22	0.19%
Scope 3 (upstream)	3.01 Purchased goods and services	Plastic	Packing foil	0.48	0.04%
Scope 3 (upstream)	3.01 Purchased goods and services	Oils	Oils	4.56	0.38%
Scope 3 (upstream)	3.01 Purchased goods and services	Water supply		0.11	0.01%
Scope 3 (upstream)	3.02 Capital goods	EPSON LCD Projector	2 units	2.18	0.18%
Scope 3 (upstream)	3.02 Capital goods	Lenovo V15-AMN - Notebook	4 units	0.91	0.08%
Scope 3 (upstream)	3.02 Capital goods	Server room cooling attic in the new building		1.03	0.09%
Scope 3 (upstream)	3.03 Fuel- and energy related activities	Car- Medium	Diesel	5.96	0.50%
Scope 3 (upstream)	3.03 Fuel- and energy related activities	Natural gas	Indirect	3.42	0.28%
Scope 3 (upstream)	3.03 Fuel- and energy related activities	Natural gas	Indirect	14.57	1.22%
Scope 3 (upstream)	3.03 Fuel- and energy related activities	Green electricity	Indirect	0.31	0.03%
Scope 3 (upstream)	3.03 Fuel- and energy related activities	Green electricity	Indirect	21.63	1.80%
Scope 3 (upstream)	3.03 Fuel- and energy related activities	Car- small	Electricity	0.28	0.02%
Scope 3 (upstream)	3.03 Fuel- and energy related activities	Car- Medium	Electricity	0.00	0.00%
Scope 3 (upstream)	3.04 Upstream transportation and distribution	Transport Procurement	LKW >12 t vorgelagert	22.28	1.86%
Scope 3 (upstream)	3.04 Upstream transportation and distribution	Transport Procurement	LKW >12 t nachgelagert	9.01	0.75%
Scope 3 (upstream)	3.04 Upstream transportation and distribution	Transport Procurement	LKW >12 t allgemein	43.82	3.65%
Scope 3 (upstream)	3.04 Upstream transportation and distribution	Transport Procurement	Sea freight tkm	78.27	6.53%
Scope 3 (upstream)	3.04 Upstream transportation and distribution	Transport Procurement	Air freight tkm	7.54	0.63%
Scope 3 (upstream)	3.04 Upstream transportation and distribution	Transport Procurement	Truck tkm	0.01	0.00%
Scope 3 (upstream)	3.04 Upstream transportation and distribution	Transport Distribution	Truck >12 t (without FedEx®)	18.61	1.55%
Scope 3 (upstream)	3.04 Upstream transportation and distribution	Transport Distribution	GLS Shipping (CO_2e Compensation)	14.54	1.21%

Scope 3 (upstream)	3.04 Upstream transportation and distribution	Transport Distribution	FedEx® Truck	0.84	0.07%
Scope 3 (upstream)	3.04 Upstream transportation and distribution	Transport Distribution	FedEx® Air freight	0.61	0.05%
Scope 3 (upstream)	3.05 Waste generated in operations	Waster supply		0.12	0.01%
Scope 3 (upstream)	3.05 Waste generated in operations	Waste		3.99	0.33%
Scope 3 (upstream)	3.05 Waste generated in operations	Paper waste		0.26	0.02%
Scope 3 (upstream)	3.05 Waste generated in operations	Plastic waste		3.67	0.31%
Scope 3 (upstream)	3.05 Waste generated in operations	Bio waste		0.00	0.00%
Scope 3 (upstream)	3.05 Waste generated in operations	Metal scrap	Recycling		
Scope 3 (upstream)	3.05 Waste generated in operations	Brass shavings	Recycling		
Scope 3 (upstream)	3.05 Waste generated in operations	Stainless steel chips	Recycling		
Scope 3 (upstream)	3.05 Waste generated in operations	Steel chips	Recycling		
Scope 3 (upstream)	3.06 Business travel	Car- small	Benzin	0.01	0.00%
Scope 3 (upstream)	3.06 Business travel	Car- Medium	Benzin	0.40	0.03%
Scope 3 (upstream)	3.06 Business travel	Car- Medium	Diesel	0.42	0.03%
Scope 3 (upstream)	3.06 Business travel	Taxi		0.02	0.00%
Scope 3 (upstream)	3.06 Business travel	Train		0.02	0.00%
Scope 3 (upstream)	3.06 Business travel	Flight < 750 km		0.49	0.04%
Scope 3 (upstream)	3.06 Business travel	Flight 750 - 3700 km		1.18	0.10%
Scope 3 (upstream)	3.06 Business travel	Flight > 3700 km		3.53	0.29%
Scope 3 (upstream)	3.06 Business travel	Hotel	Germany	0.34	0.03%
Scope 3 (upstream)	3.06 Business travel	Hotel	Poland	0.20	0.02%
Scope 3 (upstream)	3.06 Business travel	Hotel	Italy	0.06	0.00%
Scope 3 (upstream)	3.07 Employee commuting	Homeoffice – Energy mix DE	0,6053	0.65	0.05%
Scope 3 (upstream)	3.07 Employee commuting	Homeoffice – Green electricity	0,3947	0.00	0.00%
Scope 3 (upstream)	3.07 Employee commuting	Homeoffice - Heat		6.72	0.56%
Scope 3 (upstream)	3.07 Employee commuting	E-Bike		0.15	0.01%
Scope 3 (upstream)	3.07 Employee commuting	Motor bike		0.59	0.05%
Scope 3 (upstream)	3.07 Employee commuting	Bus and public transportation		1.01	0.08%
Scope 3 (upstream)	3.07 Employee commuting	Regional train		0.67	0.06%
Scope 3 (upstream)	3.07 Employee commuting	Train		0.01	0.00%
Scope 3 (upstream)	3.07 Employee commuting	Car- small	Benzin	12.66	1.06%
Scope 3 (upstream)	3.07 Employee commuting	Car- Medium	Diesel	25.30	2.11%
Scope 3 (upstream)	3.07 Employee commuting	Car- Medium	Benzin	6.98	0.58%
Scope 3 (upstream)	3.07 Employee commuting	Car- Medium	Elektro	0.14	0.01%
Scope 3 (upstream)	3.07 Employee commuting	Car- Large	Diesel	0.74	0.06%
Scope 3 (upstream)	3.07 Employee commuting	Car- Large	Benzin	7.18	0.60%
				1,199.10	**100%**

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