FORLIANCE

GROWING CLIMATE ACTION

CORPORATE CARBON FOOTPRINT 2023

Romaco Holding

September 2024

SUMMARY

Corporate Carbon Footprint *Romaco Holding*	
Standard:	**Greenhouse Gas Protocol**
Reference year:	**2023**
Accounting approach:	**Operational control approach**
Organizational boundaries	**Romaco Holding**
Operational boundaries	**Scope 1, 2 & Scope 3 upstream & downstream**

Corporate Carbon Footprint

Scope	Category	t CO_2e	%
Scope 1	1.01 Mobile Combustion	311.99	0.32%
	1.02 Stationary Combustion	328.49	0.34%
Scope 2	2.01 Electricity	357.57	0.37%
	2.03 E-Mobility	0.75	0.00%
Scope 3 Upstream	3.01 Goods and Services	11,969.23	12.23%
	3.02 Capital goods	440.68	0.45%
	3.03 Fuel- and energy-related emissions	327.72	0.33%
	3.04 Transport (upstream)	896.18	0.92%
	3.05 Waste	153.68	0.16%
	3.06 Business travel	2,325.16	2.38%
	3.07 Employee commuting	524.18	0.54%
Scope 3 Downstream	3.11 Use of product	79,916.54	81.63%
	3.12 End-of-life of product	346.34	0.35%
TOTAL		**97,898.49**	**100.00%**

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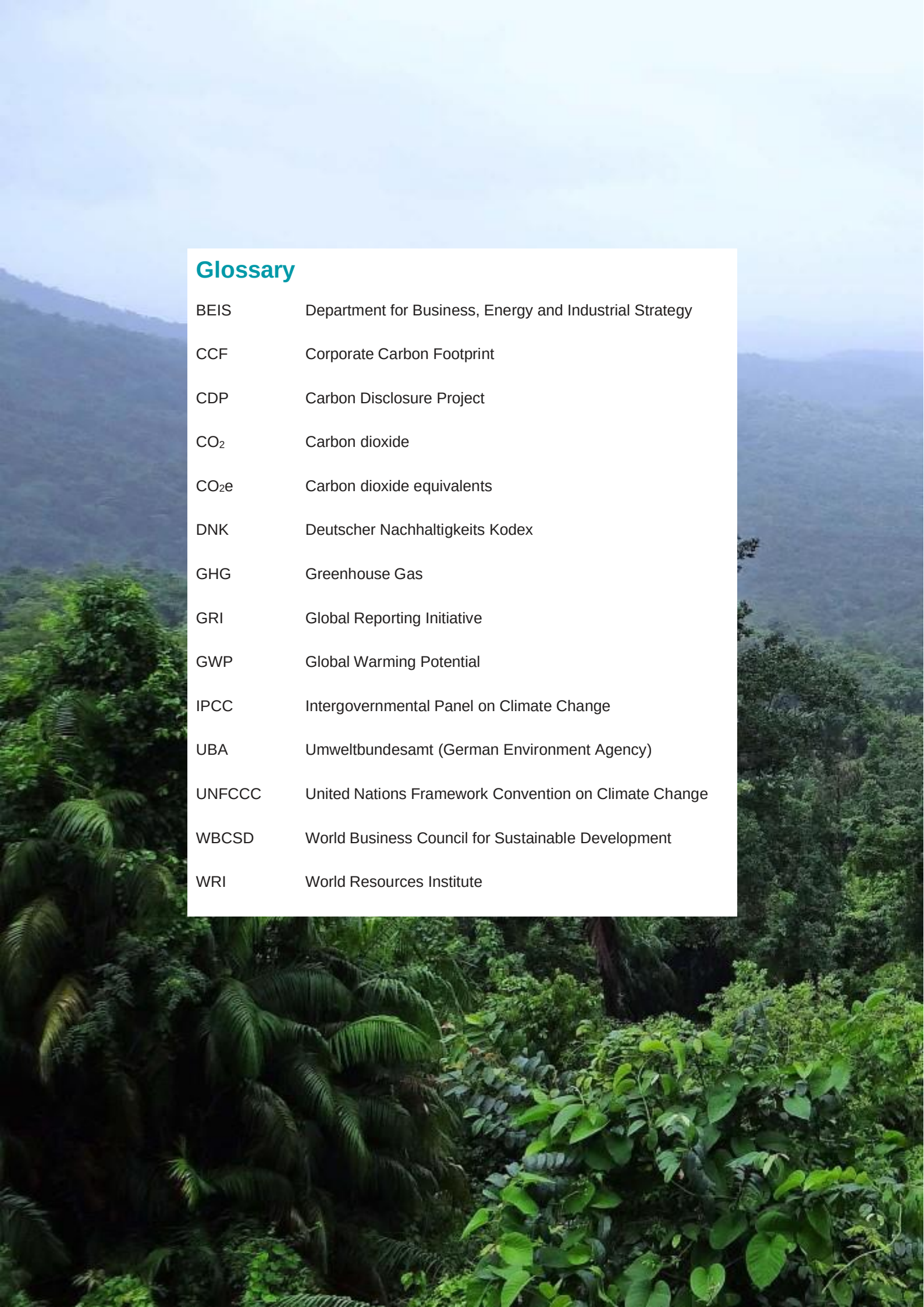


Glossary

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
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

The Romaco Holding, headquartered in Karlsruhe, Germany, is a global leader in packaging and process technologies for the pharmaceutical, food, and chemical industries. With production facilities in Germany, Italy, Spain and China along with Sales & Service Centers worldwide, Romaco Holding is an internationally established company.

As part of its commitment to sustainability, Romaco has made it a corporate priority to focus on developing technologies that enable sustainable production and systematically reduce its environmental footprint.

This report examines Romaco Holding's corporate carbon footprint which aggregates the individual carbon footprints of the following six business units across six locations:

- Romaco Pharmatechnik GmbH - Karlsruhe, Germany
- Romaco Kilian GmbH - Cologne, Germany
- Romaco Innojet GmbH - Steinen, Germany
- Romaco S.r.L. - Bologna, Italy
- Romaco Tecpharm S.L. - Barcelona, Spain
- Romaco Changsha Co. Ltd.. – Changsha, China

The footprint covers the year 2023, with organizational boundaries encompassing the aforementioned locations. The operational boundaries include Scopes 1, 2, and selected Scope 3 emissions. The overall objective is to provide a comprehensive analysis of the group’s carbon footprint.

The analysis is based on the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard, as well as the Corporate Value Chain (Scope 3) Accounting and Reporting Standard (GHG Protocol).

Subject of the report

Subject of this report is the Corporate Carbon Footprint (CCF) of Romaco Holding. A CCF is a core component of any profound climate change mitigation 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 (GHG) emissions caused by the company. The knowledge gained will be used to understand the company's impact on the global climate, as well as to demonstrate to employees, partners, and other stakeholders a responsible role in the commitment to environmental sustainability.

This assessment covers the year January 2023 – December 2023. Romaco Holding was defined as the object of observation. 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 upstream and downstream value chain of the company should also be considered.

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

2 METHODOLOGY

With the aim of achieving a high degree of comparability, transparency and traceability of 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 collection 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 recording 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, chlorofluoro-carbons, 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 GHG emissions 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 actual measurement of the emissions caused (primary data), secondary data (activity/consumption data) must be multiplied by emission factors. Emission factors represent the amount of GHG 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 GHG 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 can calculate highly precise and complete corporate carbon footprints.

3 ACCOUNTING PROCESS

3.1 Preparation of the assessment

The assessment was initiated by interactive meetings, including a kick-off workshop. In this workshop, the methodological framework was discussed and answers to the following questions were provided:

- 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 or period should the assessment be carried out?
- Data collection: which data is available in which form and who is responsible for gathering the data?

3.2 Organizational boundaries

During introductory discussions, the organizational boundaries of the footprint were determined. As a result, the **operational control approach** was chosen.

> „*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 later has an impact on the allocation of emissions to different emission scopes and thus responsibility.

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.

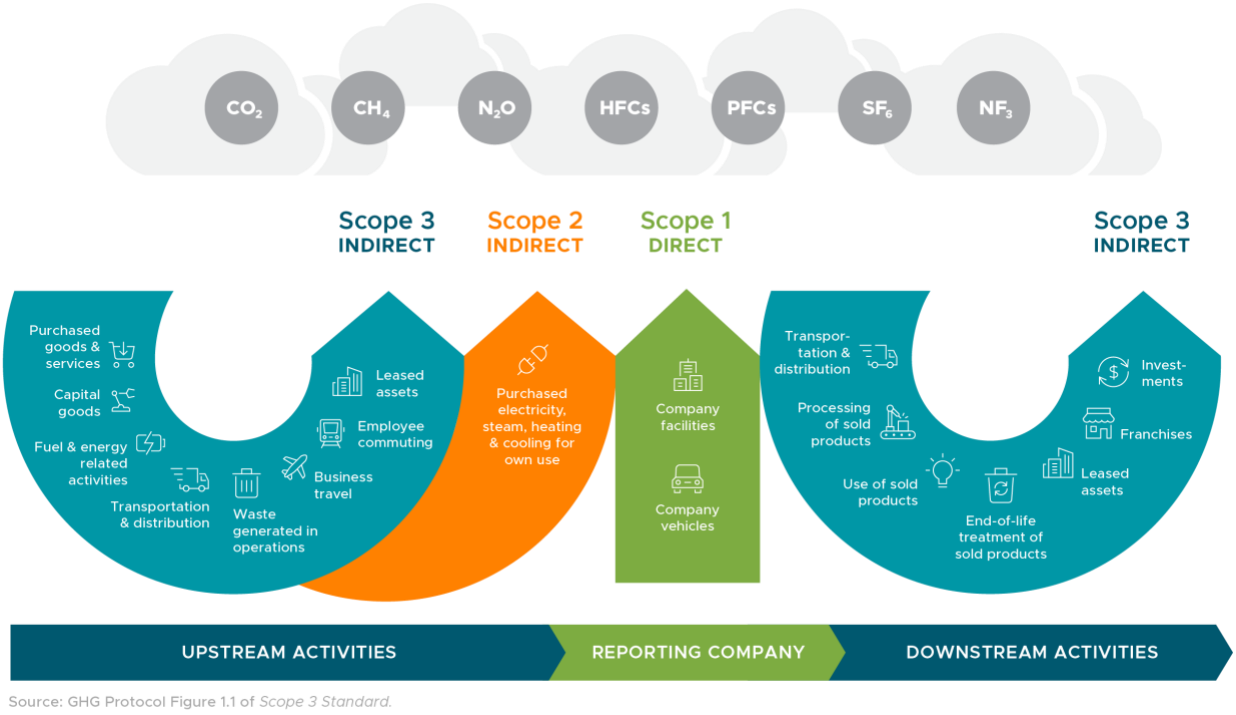
The principle of Scopes is based on the distinction between direct and indirect emission sources:

- **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 including 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 1 illustrates the distinction between Scopes 1-3 and describes examples of emission sources from the respective Scopes.



Source: GHG Protocol Figure 1.1 of *Scope 3 Standard.*

Figure 1: Overview of scopes and emission sources according to the methodology of the Greenhouse Gas Protocol

3.4 Emission sources Romaco Holding

On this basis, the following emission sources were determined for Romaco Holding (see Table 2).

Scope	Category		Emission source	Relevant	Emission source – specific example
1			Mobility	Yes	▪ Cars
1			Stationary combustion	Yes	▪ Diesel ▪ Natural gas
1			Refrigerants	No	
2			Electricity usage	Yes	
2			E-Mobility	Yes	
2			Heating & Cooling	No	
3	.1	Upstream	Purchased goods and services	Yes	▪ Raw materials ▪ Office supplies/print ▪ Catering
3	.2		Capital goods	Yes	
3	.3		Fuel- and energy-related emissions	Yes	▪ Indirect emissions resulting from scope 1 and 2 emissions for e.g. infrastructure
3	.4		Upstream transportation and distribution	Yes	▪ Upstream & purchased transportation services
3	.5		Waste generated in operations	Yes	▪ Water ▪ Waste
3	.6		Business travel	Yes	▪ Air ▪ Road ▪ Public Transportation
3	.7		Employee mobility	Yes	▪ Commute to and from work ▪ Home office
3	.8		Upstream leased assets	No	
3	.9	Downstream	Downstream transportation and distribution	No	▪ Boundaries set at the retailer
3	.10		Processing of sold products	No	
3	.11		Use of sold products	Yes	▪ Usage of machines
3	.12		End-of-life treatment of sold products	Yes	▪ Waste at consumer level caused by the sold products
3	.13		Downstream leased assets	No	
3	.14		Franchises	No	
3	.15		Investments	No	
-	-		Biogenic emissions	No	

Table 2: Emission sources for Romaco Holding

The evaluation of relevance and, thus, the decision to include emission sources in the scope of the balance was made in exchange with Romaco Holding and based on the experience of FORLIANCE.

3.5 Reporting period

The reporting period was set to be from January 2023 to December 2023, the most recent period for which complete data sets were available at the time of accounting.

4 DATA

Data collection was carried out by Romaco Holding. Corresponding data collection sheets were set up by FORLIANCE based on results from the kick-off workshop.

On Romaco's side, a contact person coordinated data collection for specific emission sources. Review and verification of collected data was carried out by FORLIANCE. During the data collection period, a regular exchange between Romaco Holding and FORLIANCE was established.

4.1 Data quality

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

- High accuracy of the data (+); based, e.g., on a billing.
- Medium accuracy of data (O); based, e.g., on extrapolation of a sample.
- Low accuracy of data (-); based, e.g., on estimation.

Categorization is based on FORLIANCE's many years of experience. The quality of activity data is listed in Table 3 for Scopes 1, 2, and 3 respectively.

SCOPE 1			
Emission source	**Quality**	**Original source**	**Comment**
Mobility	+	Real consumption data	Real consumption data was provided in the case of fuel consumption. The data quality is high. However, gaps in the data exist for few sites.
Stationary combustion	+	Real consumption data	Real consumption data was provided in the case of fuel consumption. The data quality is high. However, gaps in the data exist for few sites.

SCOPE 2			
Emission source	**Quality**	**Original source**	**Comment**
Electricity usage	+	Real consumption data	Real consumption data was provided in the case of electricity consumption. The data quality is high

SCOPE 3			
Emission source	**Quality**	**Original source**	**Comment**
Purchased goods – raw materials	O	Estimation	Data was based on weight per product sold and material emissions of already accounted products as reference quantities. The data quality is therefore medium.
Purchased goods – paper	+	Real consumption data & extrapolation	Real consumption data was available.
Purchased goods – catering	+	Real consumption data & estimation	Real consumption data was available.
Upstream transportation and distribution – raw materials	O	Estimation	Data was based on weight per product sold and transport emissions of the already accounted products as reference quantities. The data quality is therefore medium.
Upstream transportation and distribution - delivery to costumer	+	Real data	Real transportation data including weight specifications and type of transportation were used.
Waste generated in operation	+	Real data; estimation	Specific Information on actual waste quantities was available for most business units.
Business travel	+	Real data	The data was delivered very accurately, and no conversions had to be made. The data quality can be classified as 'high'
Employee commuting	+	Survey results; extrapolation	Data on employee mobility regarding the distance to work, the means of transportation used, and the number of working days were collected through a survey. The survey results are considered representative.
Use of products	O	Estimation	Emissions from use of sold products was assumed on use pattern and electricity mix used. The data quality is therefore medium.
End-of-life treatment of sold products	O	Estimation	Emissions based on weight per product sold and material composition of the already accounted products as reference quantities. The data quality is therefore medium.

Table 3: Data quality

Conclusion on data quality

Overall, the data quality has been marked as medium to high. For scope 1 and 2, the data is of higher quality than for scope 3. For the most impactful emissions categories, mainly purchased goods – raw materials and use of products medium data was provided. Where possible, Romaco Holding should look to collect specific activity data instead of estimation-based data and focus on real consumption data.

4.2 Recommendations on data collection

Scope	Measure	Details
Process	Institutionalization & automatization	Further expand internal structures and processes - raise awareness for the necessity of data and data granularity amongst data owners. Encouraging continuous communication between internal teams responsible for data collection while automating data collection.
1 & 2	Activity data for all business units	It is important to obtain activity data (actual consumption data) for all business units for at least Scopes 1 and 2. In reporting, this is the mandatory minimum according to the GHG Protocol.
3.1, 3.4, 3.10, 3.11	Focus on main emission sources - Improvement of data quality through **additional information material, transfer**	Data accuracy leads to more representative results. Improvement possible through: 1) focus on main emission sources (e.g. disaggregate product groups) 2) further collecting weight and/or material composition per piece, and 3) cooperation with service providers (obtaining PCFs).

5 ASSUMPTIONS

The following data-specific assumptions were made due to e.g. limited data format availability and quality. The table below describes for which business unit/group and respective scope(s) assumptions were taken.

Business Unit	Scope			Critical Assumptions taken
	1	2	3	
Romaco Holding			X	Scope 3.01 it was partially not possible for Romaco to reliably collect data based on the materials used in the sold products. Therefore, an approximation of the emissions from the materials used in production was attempted based on the already accounted machines (Product Carbon Footprints; accounted for in previous years). This approach was used for the materials of all products sold in 2023. The approach was implemented for all production-related business units. Scope 3.04 For the products whose emissions from material usage had to be determined using the emission intensities of known PCFs (see above), the transport services from these PCFs were also proportionally applied for upstream transport of raw materials. Scope 3.11 All business units have developed assumptions regarding the expected performance and energy consumption of each individual machine sold. Additionally, FORLIANCE has made assumptions about the expected lifespan based on calculations from the previous footprint, if these were not provided by the business units. Scope 3.12 To determine the end-of-life emissions of products sold by producing business units within the Romaco Holding, the same calculation methods used for determining the emissions of purchased goods are applied. Actual activity data is not available. Therefore, the material composition is based on the composition of already accounted products (see data collection sheet) as reference values, and the estimated waste streams are determined by weight. The following list of PCF per business unit were used for the calculation of emissions for material, transport and waste streams emissions.
Romaco Changsha Co. Ltd.				Machines: Romaco stated, that machines are or will be included in the machine lists of Innojet and Tecpharm. Spare Parts - KTP 420X (2021)
Romaco Innojet GmbH				Machines: - TPR 400 Optima (2023) Spare Parts: - KTP 420X (2021)
Romaco Kilian GmbH				Machines: - KTP 420X (2021) - KTP 590X (2021) - KTP 720X (2021) - Or an average of the aforementioned PCF Spare Parts: - An average of the aforementioned PCF

Romaco Pharmatechnik GmbH				Machines: - NBP950 (2021) - Unity 300 (2021) - Unity 600 (2023) - N760 (2024) - P91 (2024) - PC4210 (2021) - PC4000 Serie (2023) - Unity 200 (2024) - Bandtransfer (2024) - Transfer Unity 200 (2024) Spare Parts - NBP950 (2021) Manuelle Lieferscheine - NBP950 (2021)
Romaco S.r.L.				Machines: - P91 (2024) - PC4210 (2021) - PC4000 Serie (2023) - Micro 18 (2023) Spare Parts - PC4000 Serie (2023)
Romaco Tecpharm S.L.				Machines: - TPR 400 Optima (2023) Spare Parts - TPR 400 Optima (2023)

Table 4: Data specific assumptions taken in CCF 2023

6 EMISSION FACTORS

In addition to activity data, the calculation of GHG 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 mapped?
- Time: Is the correct time period mapped?
- Geography: Is the correct geographic reference mapped?
- Completeness: Is the value representative?
- Reliability: Are the sources and methods reliable and verified?

If it was deemed 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)
- Low accuracy (-)

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

Emission factor quality

The following tables list the quality of the emissions factors (see Table 5).

SCOPE 1			
Emission source	**Quality**	**Source**	**Comment**
Mobility	+	BEIS	BEIS GHG reporting conversion factors is a high quality and reliable emission factor database.
Stationary combustion	+	BEIS	BEIS GHG reporting conversion factors is a high quality and reliable emission factor database.

SCOPE 2			
Emission source	**Quality**	**Source**	**Comment**
Electricity usage	+	IEA, BEIS & client specific	The IEA and BEIS are high quality and reliable emission factor databases. Ideally, however, market-specific emission factors are provided, which was the case for some BUs. Where this information could not be provided, the location-based emission factor was used.

SCOPE 3				
Category	**Emission source**	**Quality**	**Source**	**Comment**
3.1	Purchased goods – raw materials	O/+	Ecoinvent 3.10	Emissions are not based on the actual materials of sold products, but on material of similar products assessed previously (PCF), therefore a clear classification is not possible. However, the emission factors accounted for in these reference product assessments are rated high.
3.1	Purchased goods – office supplies	+	Ecoinvent 3.10, BEIS	A precise selection of emission factors was possible. Therefore, specific emission factors could be used. The quality of the factors is rated as high.
3.1	Purchased goods – catering	O/+	Ökoinstitut, BEIS	A precise selection of emission factors was mostly possible. Therefore, specific emission factors could be used. The quality of the factors is rated as high.
3.2	Capital goods	-/O	BEIS	BEIS offering spend-based factors is a high-quality database, but the resulting mapping of emissions arising from the use of spend-based emission factors is rather inaccurate, hence the overall quality is low to medium.
3.3	Fuel- and energy related activities	+	Ecoinvent 3.10, BEIS, UBA	A precise selection of emission factors was possible. Therefore, specific emission factors could be used. The quality of the factors is rated as high.
3.4	Upstream transportation and distribution – raw materials	+	BEIS	A precise selection of emission factors was possible. Therefore, specific emission factors could be used. The quality of the factors is rated as high.
3.4	Upstream transportation and distribution – delivery to costumer	+	BEIS	A precise selection of emission factors was possible. Therefore, specific emission factors could be used. The quality of the factors is rated as high.
3.5	Waste generated in operations	+	BEIS	A precise selection of emission factors was possible. Therefore, specific emission factors could be used. The quality of the factors is rated as high.
3.6	Business travel	+	BEIS	A precise selection of emission factors was possible. Therefore, specific emission factors could be used. The quality of the factors is rated as high.
3.7	Employee mobility	+	BEIS, UBA	A precise selection of emission factors according to vehicle size and fuel type was possible. Specific differentiation was also possible for other modes of transport. Therefore, specific emission factors could be used. The quality of the factors is rated as high.
3.11	Use of sold products	O/+	IEA	Emission factor source is rated high. However, it is assumed that end customers use an average electricity mix of the respective country.
3.12	End-of-life treatment of sold products	O/+	Ecoinvent 3.10	Emissions for End-of-life treatment of sold products is based on material streams of reference product.

Table 5: Quality of emission factors

Conclusion on emission factor quality

Overall, the quality of the emission factors can be rated medium to high. Generally, high-quality emission factors could be used. It should be noted that the selection of emission factors is always indirectly related to the available activity data.

It can be stated that better activity data would also lead to improved emission factors. If emission factors are adjusted in the course of subsequent balances, these adjustments should also be implemented retroactively for the current balance. Consistency should be maintained.

7 RESULTS

This section describes the CCF results of Romaco Holding. The results are described according to the Scopes (see section 3.3).

7.1 Overall results Romaco Holding

According to GHG Protocol requirements, a distinction should be made between the market-based approach and the location-based approach (see Box 1: GHG Protocol Scope 2 Reporting).

Market-based approach

According to the ***market-based approach***, total GHG emissions of Romaco Holding from January 2023 until December 2023 amount to

97,898.49 t CO_2e.

Location-based approach

According to the ***location-based approach***, total GHG emissions of Romaco Holding from January 2023 until December 2023 amount to

99,120.97 t CO_2e.

Further analysis of results follows the *market-based approach*.

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., electricity mix Belgium).

7.2 Emissions by scope

The Scope 1 emissions of Romaco Holding total 640.65 tCO_2e (0.65 % of total emissions), while Scope 2 emissions add up to 358.32 tCO_2e (0.37 % of total emissions). Scope 3 emissions were significantly higher at 96,899.70 tCO_2e (98.98 % of total emissions).

The presentation of emission sources by Scopes and their subcategories is based on methodological requirements by the GHG Protocol and promotes 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 (Table 6 and Figure 2).

	Emission sources	t CO_2e	[%]
Scope 1	Mobility	311.99	0.32%
	Stationary combustion	328.49	0.34%
Scope 2	Electricity	357.57	0.37%
	E-Mobility	0.75	0.00%
Scope 3 upstream	Purchased goods and services	11,969.23	12.23%
	Capital Goods	440.68	0.45%
	Fuel- and energy related emissions	327.72	0.33%
	Upstream transportation and distribution	896.18	0.92%
	Waste generated in operations	153.68	0.16%
	Business travel	2,325.16	2.38%
	Employee mobility	524.18	0.54%
Scope 3 downstream	Use of sold products	79,916.54	81.63%
	End-of-life treatment of sold products	346.34	0.35%
TOTAL		**97,898.49**	**100.00%**

Table 6: Emissions by sources

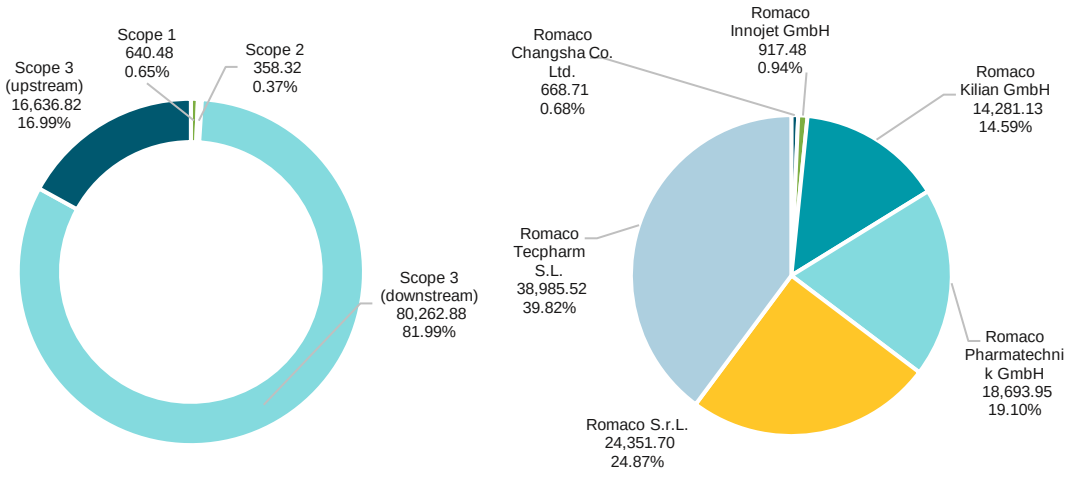


Figure 2: Total emissions by Scopes / by Business Units

Emission hotspots

As shown in table 6, three emission hotspots can be identified:

1. Use of sold products (79,916.54 tCO_2e, 81.63 % of the total)
2. Purchased goods & services (11,969.23 tCO_2e, 12.23 % of the total)
3. Business Travel (2,325.16 tCO_2e, 2.38 % of the total)

These three emission hotspots combined account for 96.23 % of total GHG emissions. Remaining categories account for just 3.77 % of total emissions.

7.3 Emissions by business unit

Romaco Pharmatechnik (incl. Holding)

Scope 1 emissions of Romaco Pharmatechnik total 208.42 tCO_2e (1.11 % of emissions within the business unit), while Scope 2 emissions add up to 0.57 tCO_2e (0.00 %). Scope 3 emissions were significantly higher at 18,484.95 tCO_2e (98.88 %). Table 7 and Figure 3 show the results in scope subcategories.

	Emission sources	t CO_2e	[%]
Scope 1	Mobility	133.52	0.71%
	Stationary combustion	74.90	0.40%
Scope 2	Electricity	-	0.00%
	E-Mobility	0.57	0.00%
Scope 3 upstream	Purchased goods and services	7,936.81	42.46%
	Capital Goods	268.03	1.43%
	Fuel- and energy related emissions	65.98	0.35%
	Upstream transportation and distribution	496.94	2.66%
	Waste generated in operations	37.97	0.20%
	Business travel	642.71	3.44%
	Employee mobility	137.43	0.74%
Scope 3 downstream	Use of sold products	8,727.05	46.68%
	End-of-life treatment of sold products	172.04	0.92%
TOTAL		**18,693.95**	**100.00%**

Table 7: Emissions by sources - Romaco Pharmatechnik

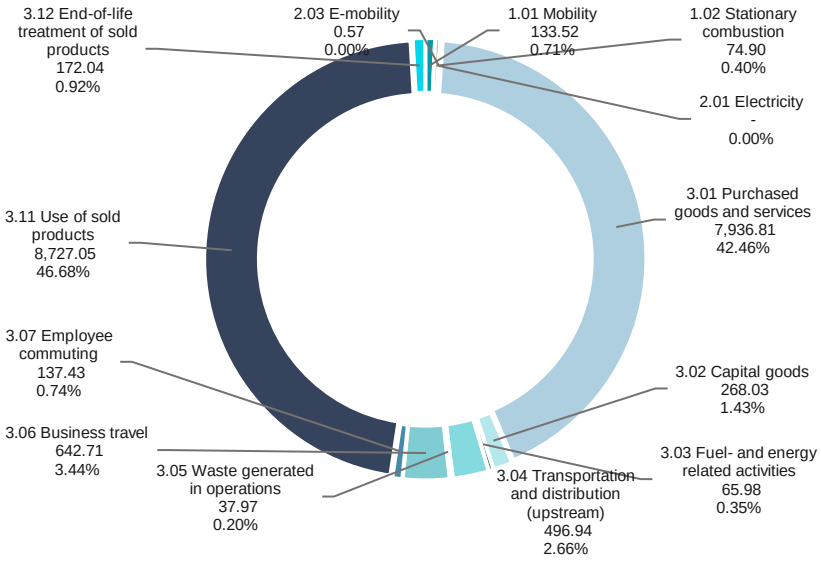


Figure 3: Emissions by categories – Romaco Pharmatechnik

Romaco Kilian

Scope 1 emissions of Romaco Kilian total 344.39 tCO_2e (2.41% of emissions within the business unit), while Scope 2 emissions add up to 0.17 tCO_2e (0.00 % of total emissions). Scope 3 emissions were significantly higher at 13,936.57 tCO_2e (97.59% of total emissions). Table 8 and Figure 4 show results in the scope subcategories.

	Emission sources	t CO_2e	[%]
Scope 1	Mobility	111.29	0.78%
	Stationary combustion	233.10	1.63%
Scope 2	Electricity	-	0.00%
	E-Mobility	0.17	0.00%
Scope 3 upstream	Purchased goods and services	1,963.29	13.75%
	Fuel- and energy related emissions	112.85	0.79%
	Upstream transportation and distribution	246.01	1.72%
	Waste generated in operations	29.91	0.21%
	Business travel	371.58	2.60%
	Employee mobility	81.10	0.57%
Scope 3 downstream	Use of sold products	11,075.27	77.55%
	End-of-life treatment of sold products	56.57	0.40%
TOTAL		**14,281.13**	**100.00%**

Table 8: Emissions by sources - Romaco Kilian

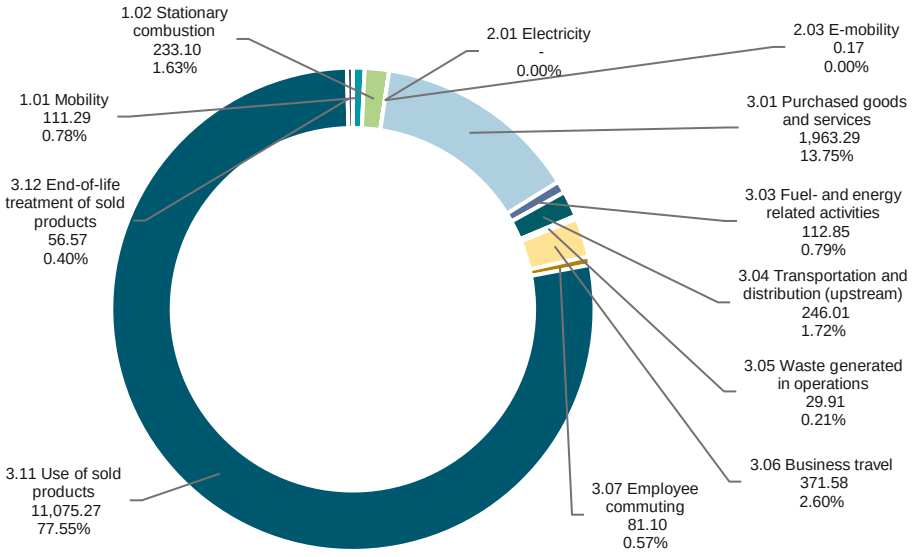


Figure 4: Emissions by categories - Romaco Kilian

Romaco Innojet

Scope 1 emissions of Romaco Innojet total 53.55 tCO_2e (5.84 % of emissions within the business unit), while Scope 2 emissions add up to 0.00 tCO_2e (0.00 %). Scope 3 emissions were significantly higher at 863.92 tCO_2e (94.16%). Table 9 and Figure 5 show results in the scope subcategories.

	Emission sources	t CO_2e	[%]
Scope 1	Mobility	33.06	3.60%
	Stationary combustion	20.49	2.23%
Scope 2	Electricity	-	0.00%
Scope 3 upstream	Purchased goods and services	25.14	2.74%
	Capital Goods	26.36	2.87%
	Fuel- and energy related emissions	16.39	1.79%
	Upstream transportation and distribution	5.71	0.62%
	Waste generated in operations	4.21	0.46%
	Business travel	77.14	8.41%
	Employee mobility	11.26	1.23%
Scope 3 downstream	Use of sold products	693.04	75.54%
	End-of-life treatment of sold products	4.69	0.51%
TOTAL		**917.48**	**100.00%**

Table 9: Emissions by sources - Romaco Innojet

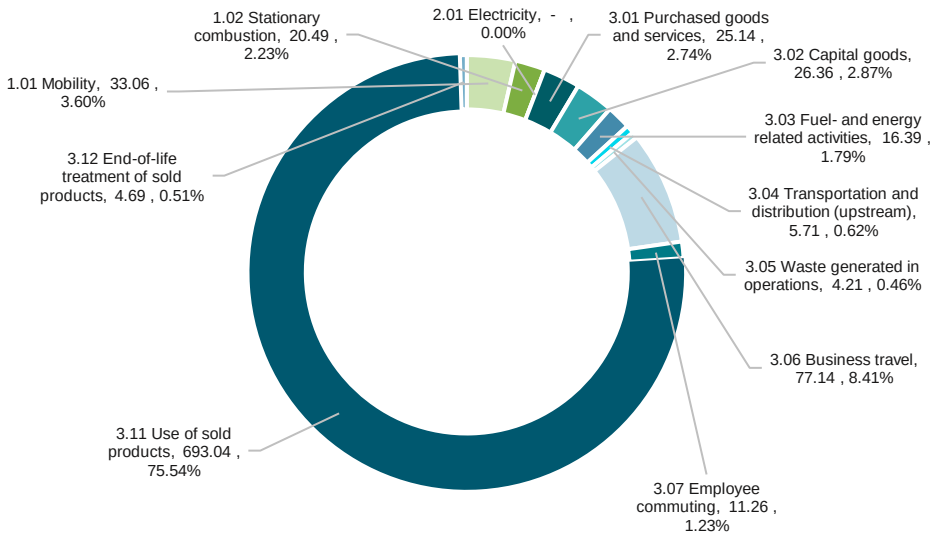


Figure 5:Emissions by categories - Romaco Innojet

Romaco S.R.L.

Scope 1 emissions of Romaco S.R.L. total 12.85 tCO_2e (0.05 % of emissions within the business unit), while Scope 2 emissions add up to 14.94 tCO_2e (0.06%). Scope 3 emissions were significantly higher at 24,323.91 tCO_2e (99.89%). Table 10 and Figure 6 show the results in scope subcategories.

	Emission sources	t CO_2e	[%]
Scope 1	Mobility	12.85	0.05%
	Stationary combustion	-	0.00%
Scope 2	Electricity	14.94	0.06%
	E-Mobility	-	0.00%
Scope 3 upstream	Purchased services	1,610.84	6.61%
	Capital Goods	37.46	0.15%
	Fuel- and energy related emissions	57.35	0.24%
	Upstream transportation and distribution	81.84	0.34%
	Waste generated in operations	40.56	0.17%
	Business travel	909.98	3.74%
	Employee mobility	185.79	0.76%
Scope 3 downstream	Use of sold products	21,343.04	87.64%
	End-of-life treatment of sold products	57.05	0.23%
TOTAL		**24,351.70**	**100.00%**

Table 10: Emissions by sources - Romaco S.R.L.

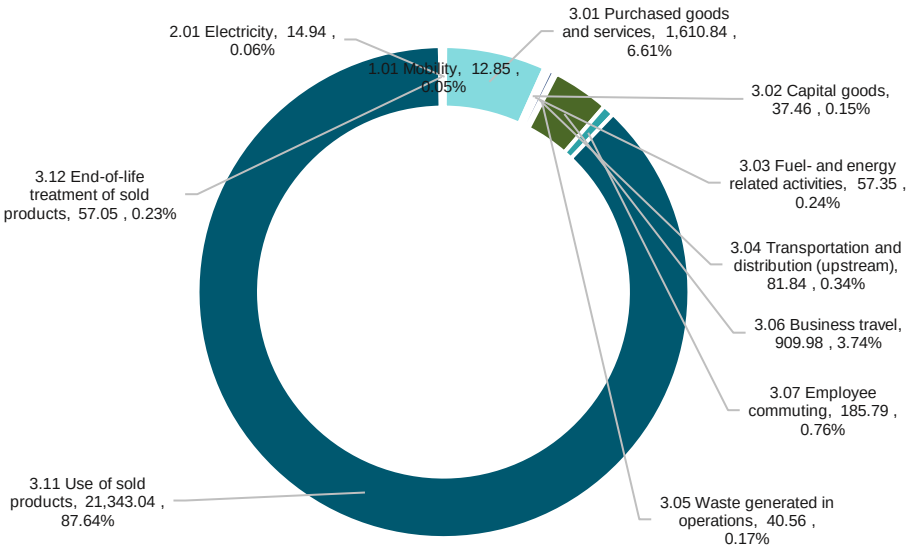


Figure 6: Emissions by categories - Romaco S.R.L.

Romaco Tecpharm

Scope 1 emissions of Romaco Tecpharm total 21.26 tCO_2e (0.05% of emissions within the business unit), while Scope 2 emissions add up to 38.66 tCO_2e (0.10%). Scope 3 emissions were significantly higher at 38,925.60 tCO_2e (99.85%). Table 11 and Figure 7 show results in the scope subcategories.

	Emission sources	t CO_2e	[%]
Scope 1	Mobility	21.26	0.05%
Scope 2	Electricity	38.66	0.10%
Scope 3 upstream	Purchased services	327.16	0.84%
	Capital Goods	74.99	0.19%
	Fuel- and energy related emissions	16.63	0.04%
	Upstream transportation and distribution	8.28	0.02%
	Waste generated in operations	28.98	0.07%
	Business travel	260.42	0.67%
	Employee mobility	79.66	0.20%
Scope 3 downstream	Use of sold products	38,078.14	97.67%
	End-of-life treatment of sold products	51.33	0.13%
TOTAL		**38,985.52**	**100.00%**

Table 11: Emissions by sources - Romaco Tecpharm

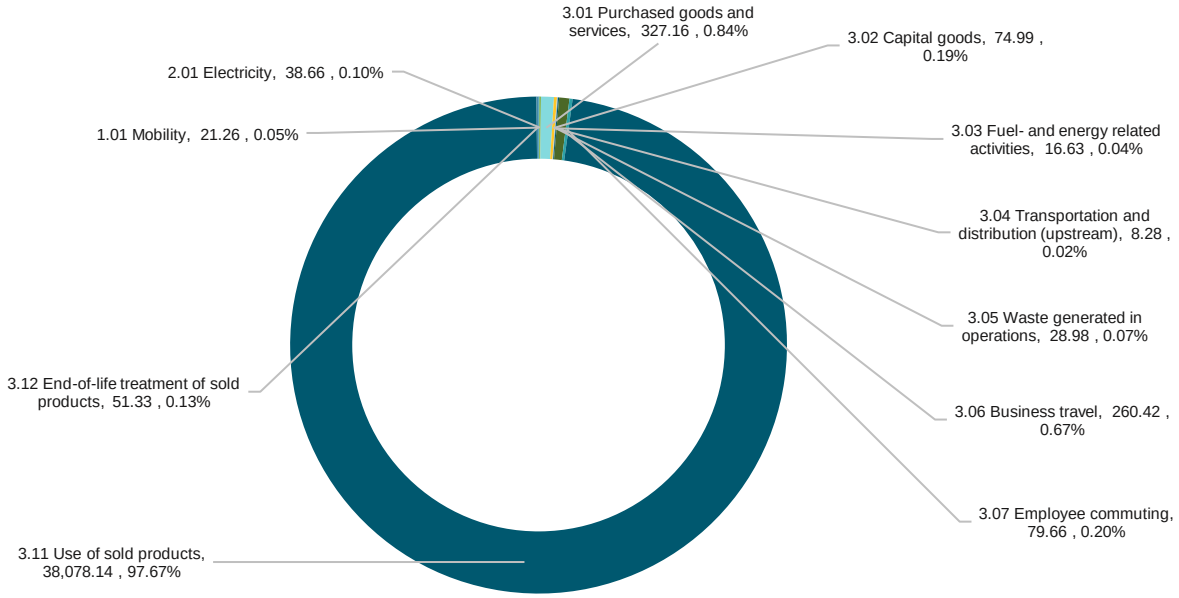


Figure 7: Emissions by categories - Romaco Tecpharm

Romaco Changsha

For Scope 1 Romaco Changsha did not cause any GHG emissions, while Scope 2 emissions add up to 303.98 tCO_2e (45.46% of emissions within the business unit). Scope 3 emissions were slightly higher at 364.74 tCO_2e (54.54% of total emissions). Table 12 and Figure 8 show results in the scope subcategories.. Romaco Changsha is a manufacturing business unit. However, for the year 2023, all machines produced in Changsha were allocated to the Innojet and Tecpharm units and considered in their footprints. Therefore, the relatively emission-intensive areas in other units are quite small for Romaco Changsha in comparison. Scope 2 is thus the dominant source of emissions as a lot of energy is still required for production and the electricity mix for China is relatively high.

	Emission sources	t CO_2e	[%]
Scope 2	Electricity	303.98	45.46%
Scope 3 upstream	Purchased services	106.00	15.85%
	Capital Goods	33.83	5.06%
	Fuel- and energy related emissions	58.52	8.75%
	Upstream transportation and distribution	57.40	8.58%
	Waste generated in operations	12.04	1.80%
	Business travel	63.35	9.47%
	Employee mobility	28.93	4.33%
Scope 3 downstream	End-of-life treatment of sold products	4.66	0.70%
TOTAL		**668.71**	**100.00%**

Table 12: Emissions by sources - Romaco Changsha

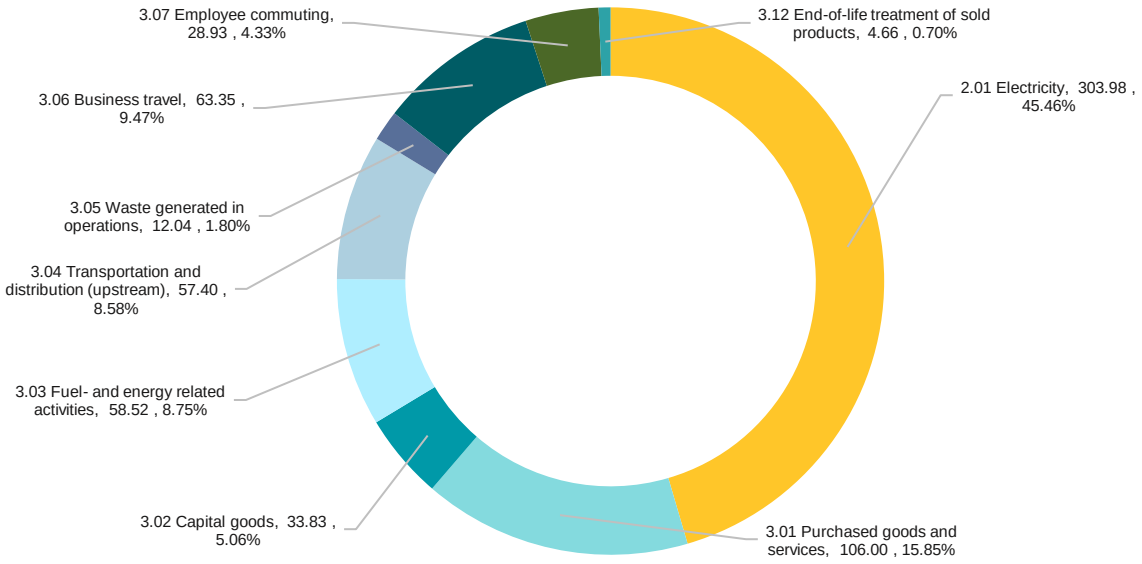


Figure 8: Emissions by categories - Romaco Changsha

7.4 Intensity metrics

In addition to absolute figures, intensity metrics will be presented as a supplement. Intensity metrics allow for a better comparison with other companies, as differences (e.g., revenue, number of employees, locations, etc.) can be put into perspective. They can be calculated by dividing the absolute emissions by a reference value. This results in the following relationship

$$intensity\ metric = \frac{performance\ value\ (here\ tCO2e)}{reference\ value}$$

Business Unit	Target	Emissions (tCO_2e)	Number of employees	Intensity metric ($t\ CO_2e$ / employee)
Romaco Holding	Emissions per employee	97,898.49	842	116.27
Romaco Changsha Co. Ltd.	Emissions per employee	668.71	63	10.61
Romaco Innojet GmbH	Emissions per employee	917.48	40	22.94
Romaco Kilian GmbH	Emissions per employee	14,281.13	199	71.76
Romaco Pharmatechnik GmbH	Emissions per employee	18,693.95	284	65.82
Romaco S.r.L.	Emissions per employee	24,351.70	193	126.17
Romaco Tecpharm S.L.	Emissions per employee	38,985.52	63	618.82

Table 13: Intensity metrics - Emissions per employee CCF 2023

Intensity metrics per employee, as presented in Table 13, depict notable variations across Romaco Holding. The highest emission intensity by far of all business units per employee is generated by Romaco Tecpharm with 618.82 tCO_2e. With four business units well below average, the impact of Romaco Tecpharm on the overall footprint can be stated as very significant.

8 DEVELOPMENT & ANALYSIS

This section compares Romaco Holding's corporate carbon footprint for reporting year 2019 with the year 2023. The most important changes are highlighted and examined in more detail below.

8.1 Comparison of emissions over time

Category	CCF 2019	CCF 2023	Development in tCO_2e compared to base year	Development in % compared to base year
Scope 1	**854.67**	**640.48**	**-214.19**	**-25.06%**
1.01 Mobile combustion	407.67	311.99	-95.68	-23.47%
1.02 Stationary combustion	447.00	328.49	-118.51	-26.51%
Scope 2	**508.50**	**358.32**	**-150.18**	**-29.53%**
2.01 Electricity	508.50	357.57	-150.92	-29.68%
2.03 E-Mobility	-	0.75	0.75	
Scope 3	**97,243.13**	**96,899.70**	**-343.43**	**-0.35%**
3.01 Goods & services	8,231.13	11,969.23	3,738.09	45.41%
3.02 Capital goods	599.98	440.68	-159.30	-26.55%
3.03 Energy supply	282.20	327.72	45.51	16.13%
3.04 Transport (upstream)	597.97	896.18	298.21	49.87%
3.05 Waste	184.99	153.68	-31.31	-16.93%
3.06 Business travel	1,824.07	2,325.16	501.10	27.47%
3.07 Commuting	1,116.47	524.18	-592.29	-53.05%
3.11 Use of product	83,929.78	79,916.54	-4,013.25	-4.78%
3.12 End-of-life of product	476.54	346.34	-130.20	-27.32%
TOTAL	**98,606.30**	**97,898.49**	**-707.80**	**-0.72%**

Table 14: Comparison of emissions CCF 2019 & CCF 2023

Compared to the first CCF done in 2019, total GHG emissions have fallen by 0.72%. This slight decrease in absolute numbers of 707.80 t CO_2e is distributed almost evenly across Scope 1, 2, and 3. At the subcategory level however, there are some significant differences that almost balance out each other. The largest differences result from a significant gain of 3,738,09 t CO_2e (or 45.41%) in the category 'Purchased Goods and Services' and a reduction in the 'Use of Sold Products' category of 4,013,25 t CO_2e (or 4.78%). The overall comparison is depicted in Table 14 and Figures 9 and 10.

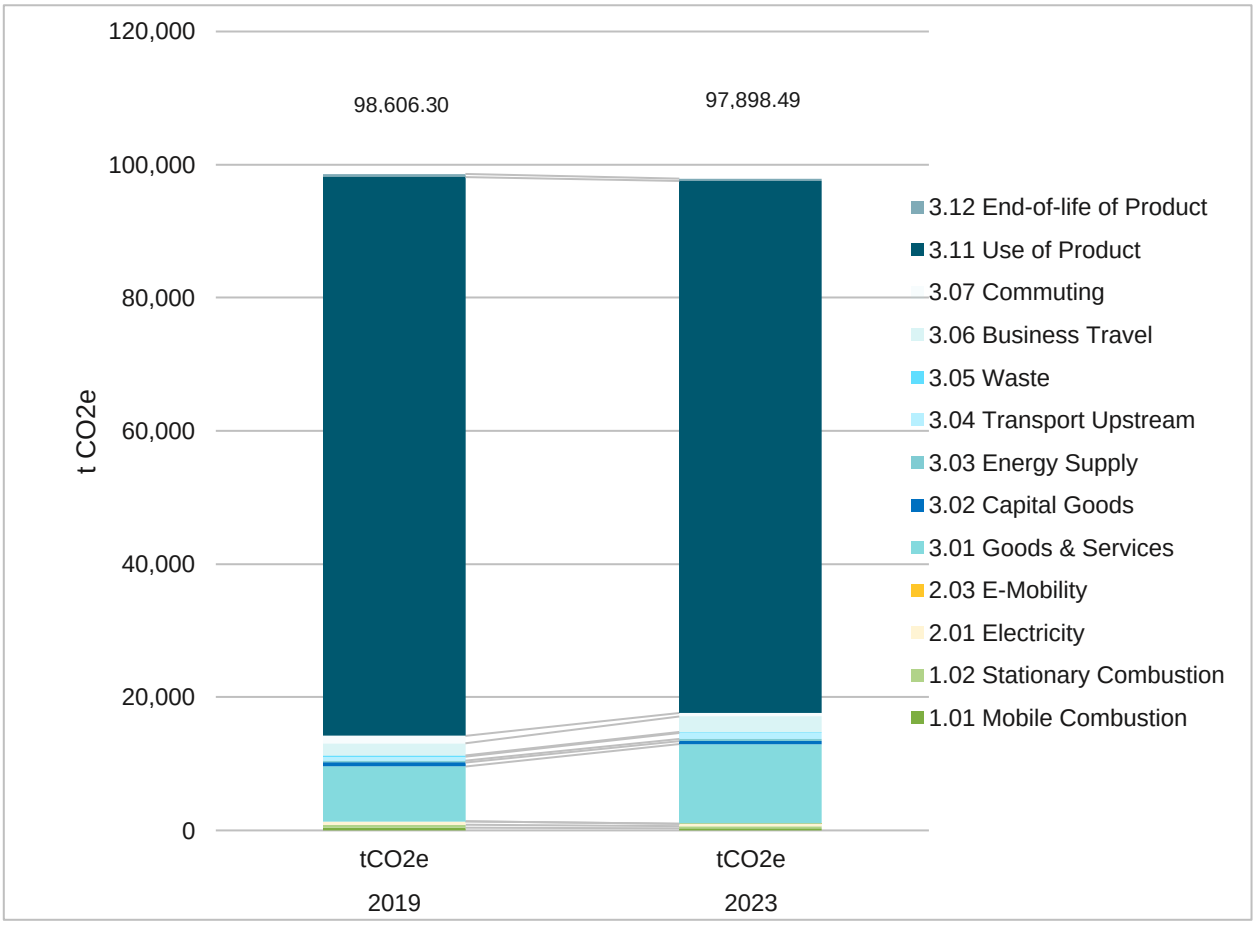


Figure 9: Comparison of emissions CCF 2019 & CCF 2023

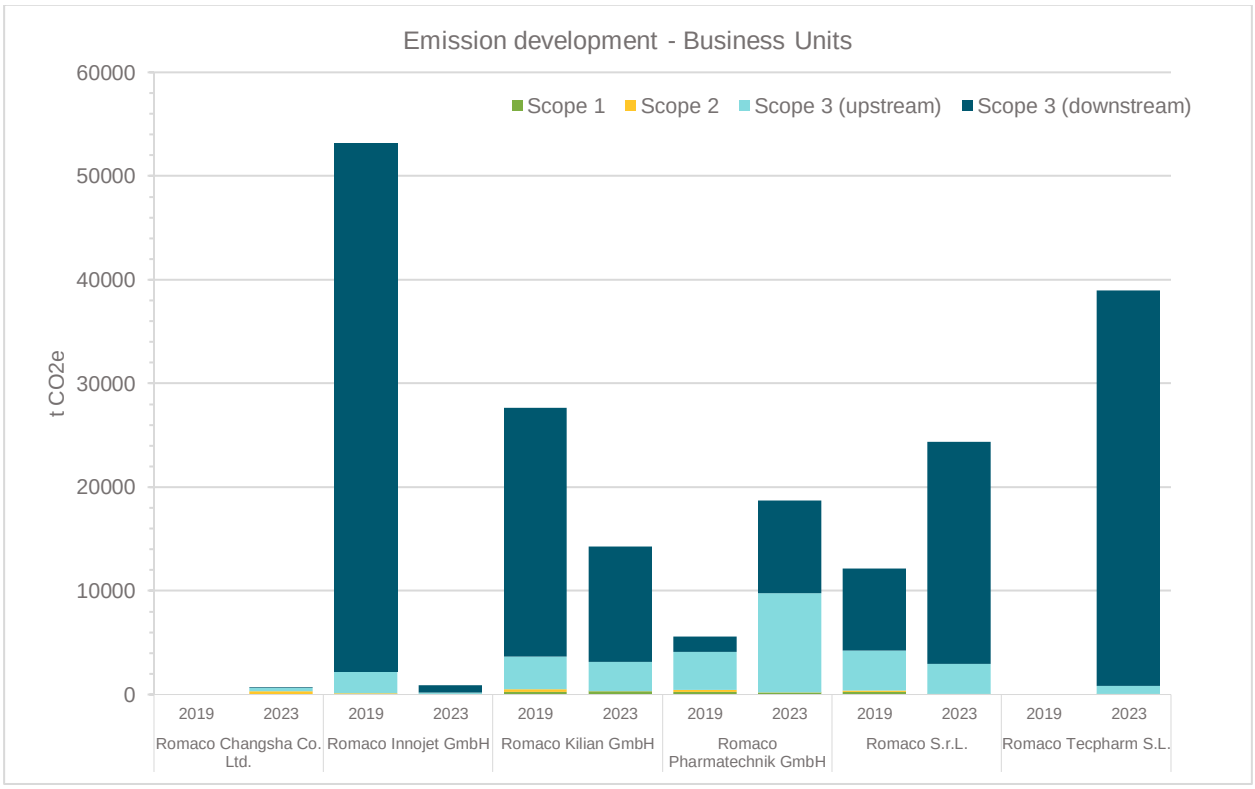


Figure 10: Emission development - Business Units

8.2 Analysis of emissions trend

Reasons for the significant changes compared to the previous year are explained in more detail below.

Development of emissions – Scope 1

SCOPE 1			2019	2023	Difference	
Business Unit		**Category**	**tCO_2e**	**tCO_2e**	**tCO_2e**	**%**
Scope 1			**854.67**	**640.48**	**-214.19**	**-25.06%**
Romaco Holding Total		**1.01 Mobile combustion**	**407.67**	**311.99**	**-95.51**	**-23.43%**
	Romaco Innojet GmbH		36.73	33.06	-3.67	-10.00%
	Romaco Kilian GmbH		126.04	111.29	-14.58	-11.56%
	Romaco Pharmatechnik GmbH		167.84	133.52	-34.32	-20.45%
	Romaco S.r.L.		77.06	12.85	-64.21	-83.32%
	Romaco Tecpharm S.L.		-	21.26	21.26	
Romaco Holding Total		**1.01 Stationary combustion**	**447.00**	**328.49**	**-118.51**	**-26.51%**
	Romaco Innojet GmbH		24.69	20.49	-4.19	-16.99%
	Romaco Kilian GmbH		129.22	233.10	103.88	80.39%
	Romaco Pharmatechnik GmbH		94.92	74.90	-20.03	-21.10%
	Romaco S.r.L.		198.17	-	-198.17	-100.00%

Table 15: Development of emissions – Scope 1

Scope 1 emissions of Romaco Holding have overall decreased by 214.19 t CO_2e as seen in Table 15.

The decrease is mainly caused by decarbonizing process and building heat by Romaco S.R.L resulting in an elimination of their emissions from stationary combustion (198.17 t CO_2e). The decrease is only partially offset by an increase of emissions for Romaco Kilian (103.88 t CO_2e). The additions of Romaco Changsha and Tecpharm only result in an increase of 21.26 t CO_2e. The overall comparison within Scope 1 is depicted in Table 15.

Development of emissions – Scope 2

			2019	2023	Difference	
Business Unit		**Category**	**tCO_2e**	**tCO_2e**	**tCO_2e**	**%**
Scope 2			**508.50**	**358.32**	**-150.18**	**-29.53%**
Romaco Holding		**2.01 Electricity**	**508.50**	**357.57**	**-150.92**	**-29.68%**
	Romaco Changsha Co. Ltd.		-	303.98	303.98	
	Romaco Innojet GmbH		34.16	-	-34.16	-100.00%
	Romaco Kilian GmbH		240.51	-	-240.51	-100.00%
	Romaco Pharmatechnik GmbH		156.93	-	-156.93	-100.00%
	Romaco S.r.L.		76.90	14.94	-61.96	-80.57%
	Romaco Tecpharm S.L.		-	38.66	38.66	
Romaco Holding		**2.03 E-mobility**	-	**0.75**	**0.75**	
	Romaco Kilian GmbH		-	0.17	0.17	
	Romaco Pharmatechnik GmbH		-	0.57	0.57	

Table 16: Development of emissions - Scope 2

Scope 2 emissions of Romaco Holding have overall decreased by 150.18 t CO_2e as seen in Table 16.

Despite the gains due to the additions of Romaco Changsha (303.98 t CO_2e) and Romaco Tecpharm (38.66 t CO_2e) into the Group, overall Scope 2 emissions decreased mainly due to the decarbonization of purchased electricity by Romaco Innojet, Kilian and Pharmatechnik resulting in a reduction of 431.60 t CO_2e. The overall comparison within Scope 2 is depicted in Table 16.

Development of emissions – Scope 3 upstream

			2019	2023	Difference	
Business Unit		**Category**	**tCO_2e**	**tCO_2e**	**tCO_2e**	**%**
Scope 3 (upstream)			**12,836.81**	**16,636.82**	**3,800.01**	**42.36%**
Romaco Holding		**3.01 Purchased goods and services**	**8,231.13**	**11,969.23**	**3,738.09**	**45.41%**
	Romaco Changsha Co. Ltd.		-	106.00	106.00	
	Romaco Innojet GmbH		1,382.47	25.14	-1,357.33	-98.18%
	Romaco Kilian GmbH		1,532.48	1,963.29	430.80	28.11%
	Romaco Pharmatechnik GmbH		2,850.21	7,936.81	5,086.60	178.46%
	Romaco S.r.L.		2,465.96	1,610.84	-855.13	-34.68%
	Romaco Tecpharm S.L.		-	327.16	327.16	
Romaco Holding		**3.02 Capital goods**	**599.98**	**440.68**	**-159.30**	**-26.55%**
	Romaco Changsha Co. Ltd.		-	33.83	33.83	
	Romaco Innojet GmbH		262.53	26.36	-236.17	-89.96%
	Romaco Kilian GmbH		92.84	-	-92.84	-100.00%
	Romaco Pharmatechnik GmbH		58.49	268.03	209.54	358.24%
	Romaco S.r.L.		186.12	37.46	-148.66	-79.87%
	Romaco Tecpharm S.L.		-	74.99	74.99	
Romaco Holding		**3.03 Fuel- and energy related activities**	**282.20**	**327.72**	**45.51**	**44.11%**
	Romaco Changsha Co. Ltd.		-	58.52	58.52	
	Romaco Innojet GmbH		14.98	16.39	1.41	9.41%
	Romaco Kilian GmbH		110.94	112.85	1.91	1.72%
	Romaco Pharmatechnik GmbH		94.36	65.98	-28.39	-30.08%
	Romaco S.r.L.		61.93	57.35	-4.57	-7.38%
	Romaco Tecpharm S.L.		-	16.63	16.63	
Romaco Holding		**3.04 Transportation and distribution (upstream)**	**597.97**	**896.18**	**298.21**	**49.87%**
	Romaco Changsha Co. Ltd.		-	57.40	57.40	
	Romaco Innojet GmbH		274.44	5.71	-268.72	-97.92%
	Romaco Kilian GmbH		144.25	246.01	101.76	70.54%
	Romaco Pharmatechnik GmbH		45.87	496.94	451.07	983.38%
	Romaco S.r.L.		133.41	81.84	-51.57	-38.65%
	Romaco Tecpharm S.L.		-	8.28	8.28	
Romaco Holding		**3.05 Waste generated in operations**	**184.99**	**153.68**	**-31.31**	**-16.93%**
	Romaco Changsha Co. Ltd.		-	12.04	12.04	
	Romaco Innojet GmbH		18.63	4.21	-14.43	-77.42%

	Romaco Kilian GmbH		88.71	29.91	-58.79	-66.28%
	Romaco Pharmatechnik GmbH		49.50	37.97	-11.53	-23.29%
	Romaco S.r.L.		28.15	40.56	12.41	44.09%
	Romaco Tecpharm S.L.		-	28.98	28.98	
Romaco Holding		**3.06 Business travel**	**1,824.07**	**2,325.16**	**501.10**	**27.47%**
	Romaco Changsha Co. Ltd.		-	63.35	63.35	
	Romaco Innojet GmbH		72.25	77.14	4.89	6.76%
	Romaco Kilian GmbH		948.46	371.58	-576.89	-60.82%
	Romaco Pharmatechnik GmbH		326.14	642.71	316.57	97.07%
	Romaco S.r.L.		477.22	909.98	432.76	90.68%
	Romaco Tecpharm S.L.		-	260.42	260.42	
Romaco Holding		**3.07 Employee commuting**	**1,116.47**	**524.18**	**-592.29**	**-53.05%**
	Romaco Changsha Co. Ltd.		-	28.93	28.93	
	Romaco Innojet GmbH		48.97	11.26	-37.72	-77.02%
	Romaco Kilian GmbH		258.42	81.10	-177.32	-68.62%
	Romaco Pharmatechnik GmbH		250.09	137.43	-112.66	-45.05%
	Romaco S.r.L.		558.97	185.79	-373.18	-66.76%
	Romaco Tecpharm S.L.		-	79.66	79.66	

Table 17: Development of emissions - Scope 3 upstream

Scope 3 upstream emissions of Romaco Holding have overall increased by 3,800.01 t CO_2e as seen in Table 17.

The largest deviations compared to the previous footprint occurred in category 3.01, Purchased Goods and Services‘. The additions of Romaco Changsha (+106.00 t CO_2e) and Romaco Tecpharm (+327.16 t CO_2e) add to more significant changes at Romaco Pharmatechnik (+5,086.60 t CO_2e) and Romaco Kilian (+430.80 t CO_2e). The gain is partially offset by major reductions at Romaco Innojet (-1,357.33 t CO_2e) and Romaco S.R.L. (-855.13 t CO_2e). Most emissions determined in this category were calculated using an estimation. This approach was applied for all raw material for production in 2023. For these emission sources, further analysis such as the identification of hotspots at the material level is not possible. Meaning that one should consider the relative high uncertainty inherent to the data quality.

Other categories show minor overall changes but with bigger impact within the respective business unit. With +451.07 t CO_2e (or 983.38%) Romaco Pharmatechnik records an increase in emissions from upstream transportation and distribution services and another +209.54 t CO_2e (or 358.24%) in emissions from Capital Goods. The comparison also shows a decrease in emissions from employee commuting throughout the Group. With -373.18 t CO_2e (66.76%) Romaco S.R.L shows the largest reduction, followed by Romaco Kilian (-177.32 t CO_2e) and Romaco Pharmatechnik (-112.66 t CO_2e).

Development of emissions - Scope 3 downstream

			2019	2023	Difference	
Business Unit		**Category**	**tCO_2e**	**tCO_2e**	**tCO_2e**	**%**
Scope 3 (downstream)			**84,406.32**	**80,262.88**	**-4,143.45**	**-32.10%**
Romaco Holding		**3.11 Use of sold products**	**83,929.78**	**79,916.54**	**-4,013.25**	**-4.78%**
	Romaco Innojet GmbH		50,969.37	693.04	-50,276.33	-98.64%
	Romaco Kilian GmbH		23,699.10	11,075.27	-12,623.83	-53.27%
	Romaco Pharmatechnik GmbH		1,462.05	8,727.05	7,265.00	496.91%
	Romaco S.r.L.		7,799.26	21,343.04	13,543.78	173.65%
	Romaco Tecpharm S.L.		-	38,078.14	38,078.14	
Romaco Holding		**3.12 End-of-life treatment of sold products**	**476.54**	**346.34**	**-130.20**	**-27.32%**
	Romaco Changsha Co. Ltd.		-	4.66	4.66	
	Romaco Innojet GmbH		22.94	4.69	-18.25	-79.57%
	Romaco Kilian GmbH		309.45	56.57	-252.88	-81.72%
	Romaco Pharmatechnik GmbH		45.09	172.04	126.94	281.51%
	Romaco S.r.L.		99.06	57.05	-42.00	-42.40%
	Romaco Tecpharm S.L.		-	51.33	51.33	

Table 18: Development of emissions - Scope 3 downstream

Scope 3 upstream emissions of Romaco Holding have overall decreased by 4,143.45 t CO_2e as seen in Table 18.

The largest deviations compared to the previous footprint occurred in category 3.11 ‚Use of sold products'. where the business units Romaco Innojet (-50,276.33 t CO2e, -98.64%) and Romaco Kilian (-12,623.83 t CO_2e, -53.27%) show significant emissions losses, whereas Romaco SRL (13,543.78 t CO_2e, 173.65%) and Romaco Pharmatechnik (7,265.00 t CO_2e, 496.91%) generated a significant gain in emissions in that category. However, the largest gain overall comes from the additions of Romaco Tecpharm (38,078.14 t CO_2e). The results shown in Table 14 and Figure 9 depict those emissions in the category 3.11 'Use of sold products' have by far the largest impact on both footprints (2019: 85.12%; 2023: 81.63%). Since emissions in the use of products category constitute a significant portion of the total emissions, special attention should be paid to the precise development and as individualized as possible selection of assumptions for determining the energy flows of the machines.

9 CONCLUSION & OUTLOOK

Romaco Holding takes its corporate responsibility seriously and aims to contribute to sustainable development. In this context, climate change mitigation is given high priority.

For this, one main goal has been to setting up a comprehensive GHG accounting system which enables Romaco Holding to assess GHG emissions and monitor the emissions trend over the years.

For the accounting year 2023, Romaco Holding, given the *market-based approach,* has caused the total sum of **97,898.49 tCO_2e**. This figure includes emissions of Scope 1, 2 und 3 (upstream and downstream).

Biggest hotspots were 'Use of sold products' (3.11), accounting for 79,916.54 tCO_2e, almost 82% of total emissions, and 'Goods and services' (3.01), accounting for 11,969.23 tCO_2e. Furthermore, when compared to the total sum of the emissions caused in the reference year 2019, a total reduction in emissions of 707.80 tCO_2e or 0.72% can be identified, even though two international business units (Romaco Tecpharm, Romaco Changsha) were added into the organization.

In addition to the numerical results, this assessment serves as an important exercise for future assessments, particularly in terms of data collection and management which consistently present challenges for any company.

Romaco Holding collected the data while FORLIANCE evaluated and processed the data delivered. Scope 3 in particular was associated with challenges. The data quality can still be improved with hotspots deserving particular attention. The quality of emission factors was assessed as positive.

Recommendations

Based on the Corporate Carbon Footprint at hand, FORLIANCE recommends the following steps:

- Reviewing emission hotspots
  - Analyzing opportunities to reduce emissions
- Emissions accounted for are likely to have inaccuracies. In order to minimize these, establishing and improving data management is necessary
  - To achieve this, data collection and management should be institutionalized. This will enable all business units to provide the right data.
- Comparison with other years
  - Comparison with future years to be able to analyze changes
- Developing reduction measures
  - To achieve science-based targets, reduction measures must be developed and implemented
- Establish a formal overall strategy

- The Corporate Carbon Footprint is the central metric in corporate climate action measuring an organization's climate impact. Nevertheless, this process and all subsequent processes should be integrated into an overall strategic process

- Offsetting hard to abate emissions
  - Residual emissions can be offset by investing in high-quality carbon removal projects to contribute to Global Net-Zero and future corporate Net-Zero

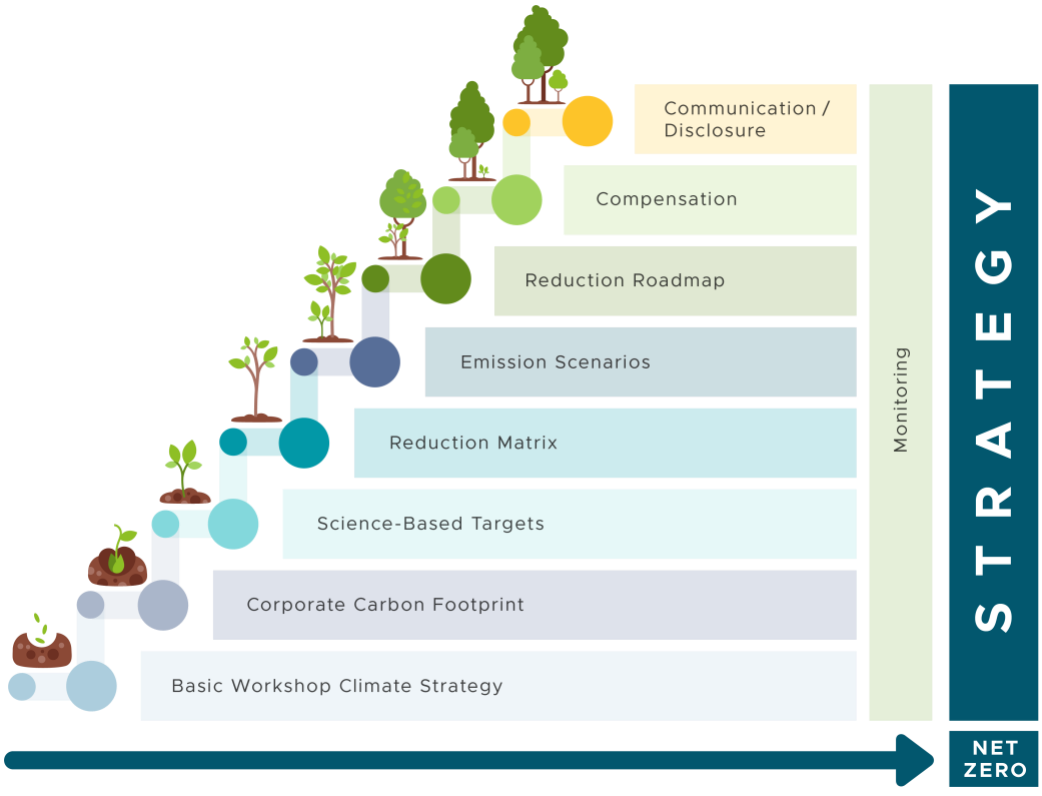


Figure 11: Holistic corporate climate strategy

10 CONTACT

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